## SIEMENS

## Data sheet

## 6ES7212-1HE40-0XB0



SIMATIC S7-1200, CPU 1212C, compact CPU, DC/DC/relay, onboard I/O: 8 DI 24 V DC; 6 DO relay 2 A; 2 AI 0-10 V DC, Power supply: DC 20.4-28.8V DC, Program/data memory 75 KB

Figure similar

| General information                                     |  |
|---|--|
| Product type designation                                | CPU 1212C DC/DC/relay                    |
| Firmware version  | V4.5                                     |
| Engineering with  |  |
| <ul> <li>Programming package</li> </ul>                 | STEP 7 V17 or higher                     |
| 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                                   |
| Reverse polarity protection                             | Yes                                      |
| Load voltage L+   |  |
| Rated value (DC)  | 24 V                                     |
| <ul> <li>permissible range, lower limit (DC)</li> </ul> | 20.4 V                                   |
| <ul> <li>permissible range, upper limit (DC)</li> </ul> | 28.8 V                                   |
| Input current   |  |
| Current consumption (rated value)                       | 400 mA; CPU only                         |
| Current consumption, max.                               | 1 200 mA; CPU with all expansion modules |
| Inrush current, max.                                    | 12 A; at 28.8 V                          |
| <sup>2</sup> t  | 0.8 A <sup>2</sup> ·s                    |
| Output current  |  |
| for backplane bus (5 V DC), max.                        | 1 000 mA; Max. 5 V DC for SM and CM      |
| Encoder supply  |  |
| 24 V encoder supply                                     |  |
| • 24 V  | L+ minus 4 V DC min.                     |
| Power loss  |  |
| Power loss, typ.  | 9 W                                      |
| Memory  |  |
| Work memory   |  |
| • integrated  | 75 kbyte                                 |
| Load memory   |  |
| • integrated  | 2 Mbyte                                  |
| <ul> <li>Plug-in (SIMATIC Memory Card), max.</li> </ul> | with SIMATIC memory card                 |
| Backup  |  |
| • present   | Yes                                      |
| maintenance-free  | Yes                                      |
| without battery   | Yes                                      |
| CPU processing times                                    |  |
| for bit operations, typ.                                | 0.08 μs; / instruction                   |
| io. a. operatione, typ.                                 |  |

| 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<br>blocks ranges from 1 to 65535. There is no restriction, the entire working<br>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. | 14 kbyte  |
| Flag  | Тякоўс  |
| • Size, max.  | 4 khuta: Ciza of hit mamory address area  |
|   | 4 kbyte; Size of bit memory address area  |
| Local data  | 40 librates Deiseita alega 4 (and provide studie); 40 l/D, aniarita alega 0.45 00: 0 l/D  |
| • per priority class, max.                                | 16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB   |
| Address area  |   |
| Process image   |   |
| <ul> <li>Inputs, adjustable</li> </ul>                    | 1 kbyte   |
| Outputs, adjustable                                       | 1 kbyte   |
| Hardware configuration                                    |   |
| Number of modules per system, max.                        | 3 comm. modules, 1 signal board, 2 signal modules   |
| Time of day   |   |
| Clock   |   |
| <ul> <li>Hardware clock (real-time)</li> </ul>            | Yes   |
| Backup time   | 480 h; Typical  |
| Deviation per day, max.                                   | $\pm 60$ s/month at 25 °C   |
| Digital inputs  |   |
|   | 0. Integrated   |
| Number of digital inputs                                  | 8; 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.                                       | 8   |
| Input voltage   |   |
| Rated value (DC)  | 24 V  |
| <ul> <li>for signal "0"</li> </ul>                        | 5 V DC at 1 mA  |
| <ul> <li>for signal "1"</li> </ul>                        | 15 V DC at 2.5 mA   |
| Input delay (for rated value of input voltage)            |   |
| for standard inputs                                       |   |
| — parameterizable   | $0.2\ \text{ms}, 0.4\ \text{ms}, 0.8\ \text{ms}, 1.6\ \text{ms}, 3.2\ \text{ms}, 6.4\ \text{ms}$ and $12.8\ \text{ms}, \text{selectable}$ 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  |   |
| <ul> <li>shielded, max.</li> </ul>                        | 500 m; 50 m for technological functions   |
| • unshielded, max.  | 300 m; for technological functions: No  |
| Digital outputs   |   |
| Number of digital outputs                                 | 6; Relays   |
| Switching capacity of the outputs                         |   |
| with resistive load, max.                                 | 2 A   |
| • on lamp load, max.                                      | 30 W with DC, 200 W with AC   |
| • On tamp toau, max.<br>Output delay with resistive load  |   |
|   | 10 mm mm  |
| • "0" to "1", max.  | 10 ms; max.   |
|   | 10 may may  |
| • "1" to "0", max.  | 10 ms; max.   |
| Relay outputs   |   |
|   | 10 ms; max.<br>6<br>mechanically 10 million, at rated load voltage 100 000  |

| Cable length  |  |
|---|--|
| • shielded, max.  | 500 m  |
| • unshielded, max.  | 150 m  |
| Analog inputs   |  |
| Number of analog inputs   | 2  |
| Input ranges  | 2  |
| Voltage   | Yes  |
| Input ranges (rated values), voltages   | 103  |
| • 0 to +10 V  | Yes  |
| — Input resistance (0 to 10 V)  | ≥100k ohms   |
| Cable length  |  |
| • shielded, max.  | 100 m; twisted and shielded  |
| Analog outputs  |  |
| Number of analog outputs  | 0  |
| Analog value generation for the inputs  | 0  |
| Integration and conversion time/resolution per channel  |  |
|   | 10 bit   |
| Resolution with overrange (bit including sign), max.  |  |
| Integration time, parameterizable   | Yes  |
| Conversion time (per channel)   | 625 μs   |
| Encoder   |  |
| Connectable encoders  | Ver  |
| 2-wire sensor   | Yes  |
| 1. Interface  | PROFILET   |
| Interface type  | PROFINET   |
| Isolated  | Yes  |
| automatic detection of transmission rate  | Yes  |
| Autonegotiation   | Yes  |
| Autocrossing  | Yes  |
| Interface types   |  |
| • RJ 45 (Ethernet)  | Yes  |
| Number of ports   | 1  |
| integrated switch   | No   |
| Protocols   |  |
| PROFINET IO Controller  | Yes  |
| PROFINET IO Device  | Yes  |
| SIMATIC communication   | Yes  |
| Open IE communication   | Yes; Optionally also encrypted   |
| Web server  | Yes  |
| Media redundancy  | No   |
| PROFINET IO Controller  |  |
| Transmission rate, max.   | 100 Mbit/s   |
| Services  |  |
| — PG/OP communication   | Yes; encryption with TLS V1.3 pre-selected   |
| — Isochronous mode  | No   |
| — IRT   | No   |
| - PROFlenergy   | No   |
| — Prioritized startup   | Yes  |
| <ul> <li>Number of IO devices with prioritized startup, max.</li> </ul>                             | 16   |
| <ul> <li>Number of connectable IO Devices, max.</li> </ul>  | 16   |
| <ul> <li>Number of connectable IO Devices for RT, max.</li> </ul>                                   | 16   |
| — of which in line, max.  | 16   |
| <ul> <li>Activation/deactivation of IO Devices</li> </ul>   | Yes  |
| <ul> <li>Number of IO Devices that can be simultaneously<br/>activated/deactivated, max.</li> </ul> | 8  |
| — Updating time   | The minimum value of the update time also depends on the communication                               |
| — Opualing lime   | 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; encryption with TLS V1.3 pre-selected   |
| — Isochronous mode  | No   |
|   |  |

|   | Al-   |
|---|---|
| — IRT   | No  |
| - PROFlenergy   | Yes   |
| - Shared device   | Yes   |
| — Number of IO Controllers with shared device, max.  Protocols  | 2   |
| Supports protocol for PROFINET IO   | Yes   |
| PROFIsafe   | No  |
|   |   |
| PROFIBUS  | Yes; CM 1243-5 (master) or CM 1242-5 (slave) required   |
|   | Yes; OPC UA Server  |
| 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   | No  |
| — 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   |
| OPC UA  |   |
| Runtime license required  | Yes; "Basic" license required   |
| OPC UA Server   | Yes; data access (read, write, subscribe), method call, runtime license required  |
| — Application authentication  | Available security policies: None, Basic128Rsa15, Basic256Rsa15,<br>Basic256Sha256  |
| - User authentication   | "anonymous" or by user name & password  |
| - Number of sessions, max.  | 10  |
| - Number of subscriptions per session, max.   | 5   |
| — Sampling interval, min.   | 100 ms  |
| — Publishing interval, min.   | 200 ms  |
| <ul> <li>— Publishing interval, mint.</li> <li>— Number of server methods, max.</li> </ul>              | 200 ms  |
| <ul> <li>Number of server methods, max.</li> <li>Number of monitored items, recommended max.</li> </ul> | 1 000   |
|   | 2   |
| <ul> <li>Number of server interfaces, max.</li> </ul>   |   |
| <ul> <li>— Number of nodes for user-defined server interfaces,<br/>max.</li> </ul>                      | 2 000   |
| 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   | PG Connections: 4 reserved / 4 max; HMI Connections: 12 reserved / 18 max;<br>S7 Connections: 8 reserved / 14 max; Open User Connections: 8 reserved / 14<br>max; Web Connections: 2 reserved / 30 max; OPC UA Connections: 0 reserved<br>/ 10 max; Total Connections: 34 reserved / 64 max |
| Test commissioning functions  |   |
| Status/control  |   |

| • Variable for the second of the se | Status/control variable   | Yes   |
|---|---|---|
| spronie         -           - rozeci         Yes           - inviter of configurable Traces         2           - ikana yes pet race, max.         32 kkyte           - ikunster of configurable Traces         2           - ikunster of configurable Traces         32 kkyte           - ikunster of configurable Traces         32 kkyte           - ikunster of configurable Traces         32 kkyte           - ikunster of configurable Traces         Yes           - ikunster of configurable Traces         Yes           - ikunster of configurable Traces         100 kHz           - ikunster of configurable Traces         100 kHz           - ikunster of configurable Traces         Yes           - ikunster of conformal means         8           Number of positioning axes in publics         4           Positia separation         100 kHz           - frequency measurement         Yes           - frequency measurement         Yes           Number of positioning axes in publics         4           Positia separation         100 kHz           - frequency measurement         Yes           - iborent he channels in groups of         1           - frequency is antice separation         100 kHz           - frequency is antr  |   |   |
| • yearsYesBolanatic bufferYes• Number of configurable Traces2• Number of Editability InformationVesDiagnotic Indication LEDYes• Number of Configurable TracesYes• Number of Configurable Traces8• Number of Configurable Traces10 kH2• Number of Configurable TracesYes• Potential separation ciglical logutaRalays• Evenes the channels in groups of2• Potential separation ciglical logutaRalays• Evenes the channels in groups of SoftYes• Potential separation ciglical configurabutesYes• Potential separation ciglical configurabutesYes• Potential separation ciglical configurabutesYes• Potential separation ciglical configurabutesNo• Evenes the channels in groups of Soft ConfigurabutesYes• Potential separa  |   | inputs/outputs, memory bits, DBs, distributed #05, timers, counters |
| DiagonaliseYes• Armober of configurable races2• Armober of configurable races2• Armober of configurable races52 Kayle• Maren yate/Kallegonalics/Marka information52 Kayle• Maren yate/Kallegonalics/Marka informationYes• REROOR LEDYes• REROOR LEDYes• REROOR LEDYes• Armober of counters6• Counter frequency, max100 Marka• Counter frequency10 A wath SB 1222• Pibernial separation digital inputs600V AC for 1 minute• Evoternial separation digital inputs600V AC for 1 minute• Evoternial separation digital inputs600V AC for 1 minute• Evoternial separat   |   | Vec   |
| • YesTraces• Number of configurable Traces2• Number of configurable Traces32 k MyleDescription Configurable Traces32 k MyleDescription Configurable Traces32 k MyleDescription Configurable TracesYes• NUMSTOF LEDYes• NUMSTOF LEDYes• RENOR LEDYes• Control6• Control9• Control9• Control of controls6• Control of controls9• Number of controls9• Number of controls9• Control of controls9• Control of controls9• Number of policitoning axes, max.8Number of policitoning axes, max.8Number of policitoning axes, max.8• Potential separation cigital laposts7• Potential separation cigital laposts7• Potential separation cigital laposts8• Potential separation cigital outputs80 VA G to 1 minute• Potential separation cigital laposts7• Potential separation cigital outputs80 VA G to 1 minute• Potential separation cigital outputs8• Potential separation cigital outputs8   |   |   |
| Tress         2           • Number of conjunctor interference inmunity against conductor state per trace, max.         512 kByte           Interrupted classification LED         502 kByte           • UNINSTOP LED         Yes           • RERORE RED         Yes           • Number of counters         6           • Counter         6           • Counter         700 kHz           • Counter         700 kHz           • Counter         6           • Counter         700 kHz           • Counter         700 kHz           • Counter         700 kHz           • Counter         700 kHz           • Counters         700 kHz           • Counters         8           • Counters         8           • Counters         500 V AC for 1 minute           • Obtendia separation digital inputs         500 V AC for 1 minute           • Obtendia separation digital inputs         500 V AC for 1 minute           • Obtendia separation digital inputs         500 V AC for 1 minute           • Obtendia separation digital inputs         500 V AC for 1 minute           • Obtendia separation digital inputs         500 V AC for 1 minute           • Obtendia separation digital inputs         800 V  | -   | Yes   |
| • Memory size partace, max.2• Memory size partace, max.52 k kryleInterruptivillapparticitizatus informationDespecticis indication LEDYes• FUNSTOP LEDYes• FUNSTOP LEDYes• FARCH LEDYes• MART LEDYes• MART LEDYes• Author for Jouritant6• Counting frequency, max.100 Hz• Author of JouritantYes• Author of Jouritant JouritantStort AC for 1 minute• Author of Jouritant JouritantYes• Author of Jouritant JouritantNo• Evolutial separation digital inpuisStort AC for 1 minute• Evolutial separation digital JouritantYes• Potential separation digital JouritantYes• Evolutial separation digital JouritantYes• Evolution Le channels, in groups of JanothoritantYes• Evolutial separation digital JouritantYes• Evolutial separation digital JouritantYes• Evolutial separation digital JouritantYes• Evolutial separation digital JouritantYes• Evolutial separation digital JouritantYes<   |   |   |
| • Interruptic/displicit/situation interformation512 kbyteInterruptic/displicit/situation interformation• RANUNSTOP LEDYes• RANUNSTOP LEDYes• RANUNSTOP LEDYes• RANUNSTOP LEDYes• RANUNSTOP LEDYes• RANUNSTOP LEDYes• RANUNSTOP LED6• Counting frequency max.100 MHz• Ranunds of countres.6• Counting frequency max.100 MHz• Ranunds of countres.9• Potential separation digital inputs500V AC for 1 minute• Potential separation digital inputs8• Potential separation digital inputs500V AC for 1 minute• Potential separatio   |   | 2   |
| Internet/Soliapneatics/industus Information           Diagneatics indication LED           • RUNS TOP LED         Yes           • RUNS TOP LED         Yes           • MAINT LED         Yes           Integrated Functions         6           • Counting frequency, max.         6           • Counting frequency, max.         100 MHz           Frequency measurement         Yes           • Counting frequency, max.         8           • Counting frequency, max.         8           • Number of positioning axes, max.         8           • Number of positioning axes, max.         8           • Number of positioning axes, max.         9           • Detential separation digital inputs         500V AC for 1 minute           • Obtential separation digital inputs         500V AC for 1 minute           • Obtential separation digital inputs         500V AC for 1 minute           • Obtential separation digital inputs         No           • Obtential separation digital inputs         No           • Obtential separation digital inputs         No           • Obtential separation digital inputs         Yes           • Obtential separation digital inputs         Yes           • Obtential separation digital inputs         Yes           • Obt  | -   |   |
| Diagnostis indication LED         Yes           • RUNSTOP LED         Yes           • RENCOR LED         Yes           • ANAINT LED         Yes           • Mamber of counters         6           • Counting frequency, max.         100 MHz           • Number of counters         6           • Counting frequency, max.         100 MHz           Frequency measurement         Yes           • Counting frequency, max.         8           Number of positioning axes yea pulse-direction interface         Up to 4 wth SB 122.           PID controller         Yes           Number of positioning axes yea pulse-direction interface         Up to 4 wth SB 122.           PID controller         Yes           Number of positioning axes yea pulse-direction interface         Up to 4 wth SB 122.           PID controller         Yes           Number of alse paration digital inputs         500 VAC for 1 minute           • Detential separation digital inputs         S00 VAC for 1 minute           • Detential separation digital outputs         Relays           • Detential separation digital outputs         Relays           • Detential separation digital outputs         No           • Enterference immunity against dicharge of static electrati/y         Yes  |   |   |
| • RUNSIOP LEDYes• ERROR LEDYes• MAINT LEDYesIntegrated Functions500 MtzCounter6• Counters6• Counters600 Mtz• Prequency measurementYesController700 MtzMumber of positioning axes, max.8Mumber of positioning axes via pulse-direction interfaceUp to 4 with SB 1222PID controllerYesNumber of positioning axes via pulse-direction interfaceUp to 4 with SB 1222PID controllerYes• Auther of positioning axes, max.8Mumber of positioning axes, max.8• Number of alami Inputs4• ControllerYes• Potential separation digital inputs500V AC for 1 minute• Detential separation digital inputs500V AC for 1 minute• Externed the channels, in groups of1• Externed the channels, in groups of2• Externed the channels, in groups of2• Externed the channels, in groups of1• Interference immunity against discharge of static electricityYes• Interference immunity against discharge of static electricityYes• Interference immunity against discharge of static electricityYes• Interference immunity against biol-frequency adataYes• Interference immunity against  |   |   |
| FROR LEDYesNUMPT LED6Counter6- Counting frequency, max.100 kHzFrequency measurementYes- Controlled positioning axes, max.8Number of positioning axes are pulse-direction interfaceUp to 4 wth SB 1222Number of positioning axes are pulse-direction interfaceVesNumber of positioning axes are pulse-direction interfaceSoft A AProcential separation digital inputs6- Potential separation digital inputs500V AC for 1 minute- Potential separation digital inputs8- Potential separation digital dicharge of staticYes- Potential separation digital dicharge of staticYes- Potential separation digital dicharge of staticYes- Text voltage at ari dicharge8- Text voltage at ari dicharge8- Text voltage at ari dichargeYes- Text voltage at ari dichargeYes- Interference immunity on supply lines acc. to EC 61000-1Yes- Text voltage at ari dichargeYes <td></td> <td>Vec</td>  |   | Vec   |
| NMMT EDYesIntegrated FunctionsCounter6• Counter for counters100 Mit/a• Counter frequency measurementYes• Controlled positioning axes, max.8Controlled positioning axes, max.8Number of positioning axes via pulse-direction interfaceYus to 4 Mits SI 1222Pille controlled positioning axes, max.8Number of positioning axes via pulse-direction interfaceYes 1Potential separationYes 3Number of positioning axes via pulse-direction interfaceYes 3Potential separation digital inputs6• Potential separation digital inputs500V AC for 1 minute• Potential separation digital outputsRelays• Potential separation digital outputsNo• Eavier the channels, in groups of2• Interference immunity against discharge of static electricity action to fischarge8kV• Interference immunity against discharge of static electricity action to fischarge8kV• Interference immunity on supply lines act, to IEC 61000-4Yes• Interference immunity on supply lines act, to IEC 61000-4Yes• Interference immunity against high-frequency radiation act to IEC 61000-4Yes• Interference immunity against high-frequency radiation act to IEC 61000-4Yes• Interference immunity against high-frequency radiation act to IEC 61000-4Yes• Interference immunity against high-frequency radiation act to IEC 61000-4Yes• Interference immunity against high-frequency radiation act to IEC 61000-4Yes  |   |   |
| integrated Functions         6           Counter         6           • Number of counters         6           • Counting frequency, max.         100 kHz           Frequency measurement         Yes           Outrolled positioning axes, max.         8           Number of positioning axes in pulse-direction interface         Up to 4 with SB 1222           PID controller         Yes           Number of adamtinguts         4           Potential separation digital inputs         500V AC for 1 minute           • Potential separation digital inputs         500V AC for 1 minute           • between the channels, in groups of         1           • Potential separation digital outputs         Relays           • between the channels, in groups of         2           EMO         1           Interference immunity against discharge of static electricity         Yes           • Interference immunity output ins discharge of static electricity         Yes           • Interference immunity output ins acc. to IEC 61000-         Yes           • Interference immunity output ins acc. to IEC 61000-         Yes           • Interference immunity output ins acc. to IEC 61000-         Yes           • Interference immunity output ins acc. to IEC 61000-         Yes           • Interference immunity  |   |   |
| Counter <ul> <li>Number of counters</li> <li>Counting frequency, max.</li> <li>100 kHz</li> <li>Counting frequency, max.</li> <li>100 kHz</li> <li>Frequency measurement</li> <li>Yes</li> <li>Controlled positioning axes, max.</li> <li>8</li> <li>Number of position-controlled positioning axes, max.</li> <li>9</li> <li>Potential separation</li> <li>Potential separation</li> <li>Potential separation</li> <li>potential separation</li> <li>potential separation digital inputs</li> <li>potential separation digital outputs</li> <li>potential separatin digital outputs</li></ul>  |   |   |
| • Number of counters         6           • Counting frequency, max.         100 kHz           Frequency measurement         Yes           • Number of positioning axes via pulse-direction interface         Up to 4 with SB 1222           PiD controller         With SB 1222           PiD controller         Yes           PiD controller         Yes           Potential separation digital inputs         4           • Potential separation digital inputs         500V AC for 1 minute           • Potential separation digital outputs         Relays           • Potential separation digital outputs         Relays           • between the channels, in groups of         2           ENC         Interference immunity against discharge of static electricity           • Interference immunity against discharge of static electricity         4           • Potential separation digital outputs         Relays           • between the channels, in groups of         2           ENC         Interference immunity against discharge of static electricity           • Interference immunity against discharge of static electricity         4           • Interference immunity against discharge of static electricity         Yes           • Interference immunity against discharge of static electricity         Yes           • Interference immun   |   |   |
| - Counting frequency, max.         100 kHz           Frequency measurement         Yes           Outmoted position-gaves via pulse-direction interface         Up to 4 with SB 1222           Number of position-gaves via pulse-direction interface         Up to 4 with SB 1222           Potential separation         Yes           Number of alarm inputs         4           Potential separation digital inputs         500V AC for 1 minute           • Potential separation digital inputs         500V AC for 1 minute           • Potential separation digital outputs         500V AC for 1 minute           • Potential separation digital outputs         No           • Debetween the channels, in groups of         2           • EMC         EMC           Interference immunity against discharge of static electricity         Yes           • Interference immunity against discharge of static electricity         Yes           • Interference immunity on supply lines acc. to IEC 61000-424         Yes           • Interference immunity on supply lines acc. to IEC 61000-454         Yes           • Interference immunity on supply lines acc. to IEC 61000-456         Yes           • Interference immunity on supply lines acc. to IEC 61000-456         Yes           • Interference immunity on supply lines acc. to IEC 61000-456         Yes           • Interference immuni  |   | 6   |
| Frequency measurement     Yes       controlled positioning axes, max.     8       Number of positioning axes via pulse-direction interface     Up to 4 with SB 1222       PID controller     Yes       Number of positioning axes via pulse-direction interface     Up to 4 with SB 1222       PID controller     Yes       Potential separation digital inputs     500V AC for 1 minute       • Potential separation digital inputs     500V AC for 1 minute       • Potential separation digital outputs     Felerital separation digital outputs       • Potential separation digital outputs     Relays       • between the channels, in groups of     1       • Deternetial separation digital outputs     Relays       • between the channels, in groups of     2       EMC     Interference immunity against discharge of static electricity       • Interference immunity against discharge     8 kV       Test votage at contact discharge     6 kV       Interference immunity on supply lines acc. to IEC 61000-<br>44     Yes       • Interference immunity on supply lines acc. to IEC 61000-<br>45     Yes       Interference immunity against collacted scate IEC 61000-<br>45     Yes       • Interference immunity against collacted scate IEC 61000-<br>45     Yes       • Interference immunity against collacted scate IEC 61000-<br>45     Yes       • Interference immunity against collacted scate IEC 61000-<br>45  |   |   |
| ontrolled positioning axes in ax.         Yes           Number of position-controlled positioning axes in ax.         8           Number of position-ing axes via pulse-direction interface         Up to 4 with SB 1222           PID controller         Yes           Number of align inputs         4           Potential separation digital inputs         500 VAC for 1 minute           • Potential separation digital outputs         1           • Potential separation digital outputs         6           • Potential separation digital outputs         Relays           • Potential separation digital outputs         No           • between the channels, in groups of         2           • Potential separation digital outputs         Relays           • between the channels, in groups of         2           • Potential separation digital outputs         No           • between the channels, in groups of         2           • Interference immunity against discharge of static electricity         Yes           • Interference immunity against discharge of static electricity         Yes           • Interference immunity on supply lines acc. to IEC 61000- 4-4         Yes           • Interference immunity on supply lines acc. to IEC 61000- 4-5         Yes           • Interference immunity against diacturates         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 inpuls         4           Potential separation digital inputs         500V AC for 1 minute           • Potential separation digital inputs         500V AC for 1 minute           • Detential separation digital outputs         Relays           • Potential separation digital outputs         Relays           • Detential separation digital outputs         Relays           • Detential separation digital outputs         Relays           • between the channels, in groups of         2           EMC         Interference immunity against discharge of static electricity           • Interference immunity against discharge         8 kV           - Test voltage at an clicacharge         8 kV           - Test voltage at notact discharge         4 kV           • Interference immunity on supply lines acc. to IEC 61000-4         Yes           • Interference immunity on supply lines acc. to IEC 61000-4         Yes           • Interference immunity on supply lines acc. to IEC 61000-4         Yes           • Interference immunity against high-frequency relation acc. to IEC 61000-4         Yes           • Interference immunity against iden  |   |   |
| Number of positioning axes via pulse-direction interface         Up to 4 with SB 1222           PID controller         Yes           Number of atom inputs         4           Potential separation digital inputs         500V AC for 1 minute           • Potential separation digital inputs         500V AC for 1 minute           • Detential separation digital outputs         1           • Potential separation digital outputs         Relays           • Detential separation digital outputs         Relays           • between the channels, in groups of         2           • Detential separation digital outputs         Relays           • between the channels, in groups of         2           • Detential separation digital outputs         Relays           • between the channels, in groups of         2           • Detential separation digital outputs         Relays           • hetween the channels, in groups of         2           • Detential separation digital outputs         No           • hetween the channels, in groups of         2           • Detential separation digital outputs         No           • Interference immunity against discharge of static electricity         Yes           • Interference immunity against discharge of static electricity         Yes           • Interference immunity on supply lines  | · · · · · · · · · · · · · · · · · · ·                           |   |
| PID controller     Yes       Number of alarm inputs     4       Potential separation digital inputs     500V AC for 1 minute       • Potential separation digital inputs     500V AC for 1 minute       • Detential separation digital outputs     1       Potential separation digital outputs     Relays       • Potential separation digital outputs     Relays       • Detential separation digital outputs     Relays       • Detentien the channels     No       • Detentien the channels     Relays       • Detentien the channels     Relays       • Interference immunity against discharge of static electricity     Yes       • Interference immunity on supply lines acc. to IEC 6 f1000-4/2     Yes       • Interference immunity on supply lines acc. to IEC 6 f1000-4/2     Yes       • Interference immunity against high-frequency radiation acc. to IEC 6 f1000-4/2     Yes       • Interference immunity against high-frequency radiation acc. to IEC 6 f1000-4/2     Yes       • Interference immunity against high-frequency r   |   |   |
| Number of alarm inputs       4         Potential separation       Foldential separation digital inputs         Potential separation digital inputs       500V AC for 1 minute         • Potential separation digital outputs       500V AC for 1 minute         • Potential separation digital outputs       Relays         • Potential separation digital outputs       Relays         • Potential separation digital outputs       Relays         • between the channels, in groups of       2         EMO       ************************************   |   |   |
| Potential separation           Protential separation digital inputs           • Potential separation digital inputs           • Potential separation digital inputs           • between the channels, in groups of           • Potential separation digital outputs           • Potential separation digital outputs           • Potential separation digital outputs           • between the channels, in groups of           2           EMO           • Interference immunity against discharge of static electricity           • Interference immunity against discharge           • No           • Interference immunity to cable-boren interference           • Interference immunity on supply lines acc. to IEC 61000-<br>4.4           • Interference immunity on supply lines acc. to IEC 61000-<br>4.4           • Interference immunity on supply lines acc. to IEC 61000-<br>4.4           • Interference immunity against voltage surge           • Interference immunity against high-frequency radiation<br>acc. to IEC 61000-<br>4.5           • Interference immunity against high-frequency radiation<br>acc. to IEC 61000-<br>4.5           • Interference immunity against high-frequency radiation<br>acc. to IEC 61000-<br>4.5           • Interference immunity against high-frequency radiation<br>acc. to IEC 61000-<br>4.5           • Interference immunity against high-frequency radiation<br>acc. to IEC 61000-<br>4.5           • Interference immunity agains  |   |   |
| Potential separation digital inputs       500V AC for 1 minute <ul> <li>Potential separation digital outputs</li> <li>Between the channels, in groups of</li> <li>Potential separation digital outputs</li> <li>Relays</li> <li>No</li> <li>between the channels</li> <li>No</li> <li>between the channels, in groups of</li> <li>2</li> </ul> <li>Interference immunity against discharge of static electricity</li> <li>Interference immunity against discharge of static electricity</li> <li>Interference immunity to cable-borne interference</li> <li>Interference immunity to cable-borne interference</li> <li>Interference immunity on supply lines acc. to IEC 61000-44</li> <li>Interference immunity on supply lines acc. to IEC 61000-44</li> <li>Interference immunity against voltage surge</li> <li>Interference immunity against conducted variable disturbance induced by high-frequency fields</li> <li>Interference immunity against tomburstial areas</li> <li>Ves: Group 1</li> <li>Ves: Group 1</li> <li>Ves: When appropriate measures are used to ensure compliance with the limits for class B, for use in industrial areas</li> <li>Ves: Group 1</li> <li>Ves: When appropriate measures are used to ensure compliance with the limits for class B according to EN 55011</li> <li>Degree and class of protection</li> <li>IP20</li> <li>Standards, approvals, certificates</li> <li>CE mark</li> <li>Ves</li> <li>Mapproval</li> <li>Yes</li> <li>Red</li> <li>Red</li> <li>Mapproval</li> <li>Yes</li>   |   | 4   |
| • Potential separation digital inputs     500V AC for 1 minute       • between the channels, in groups of     1       Potential separation digital outputs     Relays       • botential separation digital outputs     Relays       • Interference immunity against discharge of static electricity     Yes       • Interference immunity on supply lines acc. to IEC 61000-     Yes       • Interference immunity on signal cables acc. to IEC 61000-     Yes       • Interference immunity on supply lines acc. to IEC 61000-     Yes       • Interference immunity against thigh-frequency relation  |   |   |
| • between the channels, in groups of       1         Potential separation digital outputs       Relays         • Potential separation digital outputs       Relays         • between the channels       No         • between the channels       No         • between the channels, in groups of       2         Interference immunity against discharge of static electricity       • Interference immunity against discharge of static electricity         • Interference immunity against discharge       8 kV         — Test voltage at contact discharge       8 kV         — Test voltage at contact discharge       6 kV         Interference immunity on supply lines acc. to IEC 61000-<br>4.4       Yes         • Interference immunity on signal cables acc. to IEC 61000-<br>4.4       Yes         • Interference immunity against voltage surge       Yes         • Interference immunity against intolutage surge       Yes         • Interference immunity against intolutage surge       Yes         • Interference immunity against intolutage surge       Yes         • Interference immunity against industrial areas       Yes; Group 1         • Limit class A, for use in industrial areas       Yes; Group 1         • Limit class B, for use in residential areas       Yes; Group 1         • Degree of protection       IP20         Standards,  |   |   |
| Potential separation digital outputs       Relays            P Otential separation digital outputs        Relays             P otential separation digital outputs        Relays             between the channels, in groups of        2             EMC        Interference immunity against discharge of static electricity        Yes             enterference immunity against discharge        8 kV             enterference immunity on supply lines acc. to IEC 61000-42        Yes             enterference immunity on supply lines acc. to IEC 61000-        Yes             enterference immunity on supply lines acc. to IEC 61000-        Yes             enterference immunity on supply lines acc. to IEC 61000-        Yes             enterference immunity on supply lines acc. to IEC 61000-        Yes             enterference immunity against disturbance induced by high-frequency fields        Yes             enterference immunity against disturbance induced by high-frequency fields        Yes             enterference immunity against inductial areas        Yes; Group 1             enterference immunity against inductial areas        Yes; Group 1             Emission of radio interference acc. to EN 50 011 <td></td> <td></td>   |   |   |
| • Potential separation digital outputs     Relays       • between the channels     No       • between the channels, in groups of     2 <b>EMC</b> Interference immunity against discharge of static electricity       • Interference immunity against discharge of static electricity     Yes       • Interference immunity against discharge     8 kV       - Test voltage at air discharge     6 kV       Interference immunity to cable-bone interference     6 kV       • Interference immunity on supply lines acc. to IEC 61000-<br>44     Yes       • Interference immunity on supply lines acc. to IEC 61000-<br>44     Yes       • Interference immunity against colduced variable disturbance induced by high-frequency fields     Yes       • Interference immunity against toiltage arge     Yes       • Interference immunity against toiltage arge     Yes       • Interference immunity against conducted variable disturbance induced by high-frequency fields     Yes       • Interference immunity against toiltage arge     Yes       • Interference immunity against ligh-frequency radiation acc. to IEC 61000-<br>4.5     Yes       • Interference immunity against ligh-frequency radiation acc. to IEC 61000-<br>4.5     Yes       • Interference immunity against conducted variable disturbance induced by high-frequency fields     Yes       • Interference immunity against ligh-frequency radiation acc. to IEC 61000-<br>4.5     Yes       • Interference immunity against   |   | 1   |
| • between the channels     No       • between the channels, in groups of     2       EMC     Interference immunity against discharge of static electricity       • Interference immunity against discharge of static     Yes       electricity acc. to IEC 61000-4-2     8 kV       - Test voltage at in discharge     8 kV       - Test voltage at in discharge     6 kV       Interference immunity to cable-borne interference     6 kV       • Interference immunity on supply lines acc. to IEC 61000-4     Yes       • Interference immunity on supply lines acc. to IEC 61000-4     Yes       • Interference immunity against colduced variable disturbance induced by high-frequency fields     Yes       • Interference immunity against high-frequency radiation acc. to IEC 61000-4-5     Yes       • Interference immunity against high-frequency radiation acc. to IEC 61000-4-5     Yes       • Interference immunity against high-frequency radiation acc. to IEC 61000-4-5     Yes       • Interference immunity against high-frequency radiation acc. to IEC 61000-4-5     Yes       • Interference immunity against high-frequency radiation acc. to IEC 61000-4-5     Yes       • Interference immunity against high-frequency radiation acc. to IEC 61000-4-5     Yes       • Interference immunity against high-frequency radiation acc. to IEC 61000-4-5     Yes       • Interference immunity against high-frequency radiation acc. to IEC 61000-4-5     Yes       • Inte  |   |   |
| • between the channels, in groups of       2         FMC       Interference immunity against discharge of static electricity         • interference immunity against discharge       Yes         - Test voltage at air discharge       8 kV         - Test voltage at air discharge       6 kV         Interference immunity to cable-borne interference       Kes         • Interference immunity on supply lines acc. to IEC 61000-<br>4.4       Yes         • Interference immunity on supply lines acc. to IEC 61000-<br>4.4       Yes         • Interference immunity on supply lines acc. to IEC 61000-<br>4.5       Yes         Interference immunity on supply lines acc. to IEC 61000-<br>4.5       Yes         Interference immunity against voltage surge       Yes         • Interference immunity against voltage surge       Yes  |   |   |
| EMC         Interference immunity against discharge of static electricity         • Interference immunity against discharge of static electricity         • Interference immunity against discharge of static electricity         • Test voltage at air discharge       8 kV         - Test voltage at contact discharge       6 kV         Interference immunity to cable-borne interference       6 kV         • Interference immunity on supply lines acc. to IEC 61000-<br>44       Yes         • Interference immunity against voltage surge       Yes         • Interference immunity against high-frequency radiation<br>acc. to IEC 61000-4-5       Yes         • Interference immunity against high-frequency radiation<br>acc. to IEC 61000-4-5       Yes         • Interference immunity against high-frequency radiation<br>acc. to IEC 61000-4-8       Yes         • Interference immunity against high-frequency radiation<br>acc. to IEC 61000-4-8       Yes         • Interference immunity against high-frequency radiation<br>acc. to IEC 61000-4-8       Yes         • Limit class A, for use in industrial areas       Yes; Group 1         • Limit class B, for use in residential areas       Yes; Group 1         • Limit class of protection       IP20         Standards, approvals, certificates       Yes         CE mark       Yes         UL approval       Yes         CULus <td< td=""><td></td><td></td></td<>  |   |   |
| Interference immunity against discharge of static       Yes         electricity acc. to IEC 61000-4-2       8 kV         — Test voltage at air discharge       6 kV         Interference immunity to cable-borne interference       6 kV         Interference immunity to supply lines acc. to IEC 61000-<br>4-4       Yes         Interference immunity on supply lines acc. to IEC 61000-<br>4-4       Yes         Interference immunity against voltage surge       Yes         Interference immunity against conducted variable disturbance induced by high-frequency fields       Yes         Interference immunity against tigh-frequency radiation<br>acc. to IEC 61000-4-6       Yes         Emission of radio interference acc. to EN 55 011       Yes; Group 1         I.Limit class A, for use in industrial areas       Yes; When appropriate measures are used to ensure compliance with the limits<br>for Class B according to EN 55011         Degree and class of protection       IP20         Standards, approvals, certificates       Yes         CE mark       Yes         QuiLus       Yes         FM approval       Yes   |   | 2   |
| • Interference immunity against discharge of static       Yes         Test voltage at air discharge       8 kV         Test voltage at contact discharge       8 kV         Interference immunity to cable-borne interference       6 kV         Interference immunity on supply lines acc. to IEC 61000-<br>4-4       Yes         Interference immunity on supply lines acc. to IEC 61000-<br>4-4       Yes         Interference immunity on supply lines acc. to IEC 61000-<br>4-4       Yes         Interference immunity against voltage surge       Yes         Interference immunity against tonducted variable disturbance induced by high-frequency fields       Yes         Interference immunity against tonducted variable disturbance induced by high-frequency fields       Yes         Interference immunity against high-frequency radiation<br>acc. to IEC 61000-4-6       Yes         Emission of radio interference acc. to EN 55 011       Yes         Itimit class A, for use in industrial areas       Yes; Group 1         Itimit class B, for use in residential areas       Yes; When appropriate measures are used to ensure compliance with the limits<br>for Usas B according to EN 55011         Degree and class of protection       IP20         Standards, approvals, certificates       Yes         CE mark       Yes         UL approval       Yes         FM approval       Yes   |   |   |
| electricity acc. to IEC 61000-4-2       8 kV         — Test voltage at air discharge       8 kV         — Test voltage at contact discharge       6 kV         Interference immunity to cable-bome interference       6 kV         • Interference immunity on signal cables acc. to IEC 61000-<br>4.4       Yes         • Interference immunity on signal cables acc. to IEC 61000-<br>4.4       Yes         • Interference immunity on signal cables acc. to IEC 61000-<br>4.4       Yes         • Interference immunity on signal cables acc. to IEC 61000-<br>4.4       Yes         • Interference immunity against voltage surge       Yes         • Interference immunity against conducted variable disturbance inducted variable disturbanc  |   | N/  |
| - Test voltage at air discharge       8 kV         - Test voltage at contact discharge       6 kV         Interference immunity to cable-borne interference       interference immunity on supply lines acc. to IEC 61000-<br>4.4       Yes         • Interference immunity on signal cables acc. to IEC 61000-<br>4.4       Yes       Yes         • Interference immunity on supply lines acc. to IEC 61000-<br>4.4       Yes       Yes         • Interference immunity against voltage surge       Yes       Yes         • Interference immunity against structure valiation acc. to IEC 61000-<br>4.5       Yes       Yes         Emission of radio interference acc. to EN 55 011       Interference immunity consupply incertage       Yes         • Limit class B, for use in residential areas       Yes; Group 1       Yes       Yes         IP degree of protection       IP20       IP20       IP20       IP20  |   | Yes   |
|   | 5   | 8 kV  |
| Interference immunity to cable-borne interference         • Interference immunity on supply lines acc. to IEC 61000-<br>4.4         • Interference immunity on signal cables acc. to IEC 61000-<br>4.4         • Interference immunity against voltage surge         • Interference immunity on supply lines acc. to IEC 61000-<br>4.5         Interference immunity against voltage surge         • Interference immunity against conducted variable disturbance induced by high-frequency fields         • Interference immunity against high-frequency radiation<br>acc. to IEC 61000-4-6         Perference immunity against high-frequency radiation<br>acc. to IEC 61000-4-6         Ves         Cemission of radio interference acc. to EN 55 011         • Limit class B, 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<br>for Class B according to EN 55011         Degree and class Of protection         IP degree of protection         IP degree of protection         IP degree of protection         Ves         CE mark       Yes         UL approval       Yes         CLus       Yes         FM approval       Yes         RCM (formerly C-TICK)       Yes  |   |   |
| • Interference immunity on supply lines acc. to IEC 61000-<br>4-4Yes• Interference immunity on signal cables acc. to IEC 61000-<br>4-4Yes• Interference immunity against voltage surgeYes• Interference immunity against voltage surgeYes• Interference immunity against conducted variable disturbance induced by high-frequency fieldsYesInterference immunity against high-frequency radiation<br>acc. to IEC 61000-4-6Yes• Interference immunity against high-frequency radiation<br>acc. to IEC 61000-4-6Yes• Emission of radio interference acc. to EN 55 011Yes; Group 1• Limit class A, for use in industrial areas<br>• Limit class B, for use in residential areas<br>• Limit class B, for use in residential areas<br>• Limit class G protectionYes; When appropriate measures are used to ensure compliance with the limits<br>for Class B according to EN 55011Degree and class of protectionIP20Standards, approvals, certificatesYesCE mark<br>UL approval<br>CULusYesPM approval<br>RCM (formerly C-TICK)Yes  |   |   |
| 4-4       Interference immunity on signal cables acc. to IEC 61000-         4-4       Yes         Interference immunity against voltage surge       Yes         • Interference immunity on supply lines acc. to IEC 61000-       Yes         4-5       Yes         Interference immunity against conducted variable disturbance induced by high-frequency fields       Yes         • Interference immunity against conducted variable disturbance induced by high-frequency fields       Yes         • Interference immunity against conducted variable disturbance induced by high-frequency fields       Yes         • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6       Yes         Emission of radio interference acc. to EN 55 011       Yes; Group 1         • Limit class A, for use in industrial areas       Yes; Group 1         • Limit class of protection       IP20         Standards, approvals, certificates       Yes         CE mark       Yes         UL approval       Yes         cULus       Yes         FM approval       Yes         RCM (formerly C-TICK)       Yes   |   | Yes   |
| 4-4         Interference immunity against voltage surge         • Interference immunity on supply lines acc. to IEC 61000-<br>4-5         Interference immunity against conducted variable disturbance induced by high-frequency fields         • Interference immunity against high-frequency radiation<br>acc. to IEC 61000-4-6         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<br>for Class B according to EN 55011         Degree and class of protection       IP20         Standards, approvals, certificates       Yes         CE mark       Yes         UL approval       Yes         cULus       Yes         FM approval       Yes         RCM (formerly C-TICK)       Yes   |   |   |
| Interference immunity against voltage surge         • Interference immunity on supply lines acc. to IEC 61000-<br>4-5         Interference immunity against conducted variable disturbance induced by high-frequency fields         • Interference immunity against high-frequency radiation<br>acc. to IEC 61000-4-6         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<br>for Class B according to EN 55011         Degree and class of protection       IP20         Standards, approvals, certificates       Yes         CE mark       Yes         UL approval       Yes         FM approval       Yes         FM approval       Yes         RCM (formerly C-TICK)       Yes   |   | Yes   |
| • Interference immunity on supply lines acc. to IEC 61000-<br>4-5YesInterference immunity against conducted variable disturbance induced by high-frequency fields•• Interference immunity against high-frequency radiation<br>acc. to IEC 61000-4-6YesEmission of radio interference acc. to EN 55 011Yes; Group 1• Limit class A, for use in industrial areas<br>• Limit class B, for use in residential areasYes; When appropriate measures are used to ensure compliance with the limits<br>for Class B according to EN 55011Degree and class of protectionIP20IP degree of protectionIP20Standards, approvals, certificatesYesCE mark<br>UL approval<br>cULusYesVesYesFM approval<br>RCM (formerly C-TICK)Yes   |   |   |
| 4-5         Interference immunity against conducted variable disturbance induced by high-frequency fields         • 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         • Limit class B, for use in residential areas         • Limit class of protection         IP degree of protection         IP degree of protection         CE mark         Ves         UL approval         cULus         FM approval         FM approval         RCM (formerly C-TICK)  |   |   |
| Interference immunity against conducted variable disturbance induced by high-frequency fields       Yes         • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6       Yes         Emission of radio interference acc. to EN 55 011       Yes; Group 1         • Limit class A, for use in industrial 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 20         IP degree of protection       IP20         Standards, approvals, certificates       Yes         CE mark       Yes         UL approval       Yes         FM approval       Yes         FM approval       Yes         RCM (formerly C-TICK)       Yes   |   | Yes   |
| <ul> <li>Interference immunity against high-frequency radiation acc. to IEC 61000-4-6</li> <li>Emission of radio interference acc. to EN 55 011</li> <li>Limit class A, for use in industrial areas</li> <li>Limit class B, for use in residential areas</li> <li>Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011</li> <li>Degree and class of protection</li> <li>IP degree of protection</li> <li>IP20</li> <li>Standards, approvals, certificates</li> <li>CE mark</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>CLus</li> <li>Yes</li> <li>Yes</li> <li>FM approval</li> <li>RCM (formerly C-TICK)</li> <li>Yes</li> </ul>   |   | ced by high-frequency fields  |
| acc. to IEC 61000-4-6Emission of radio interference acc. to EN 55 011• Limit class A, for use in industrial areasYes; Group 1• Limit class B, for use in residential areasYes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011Degree and class of protectionIP 20Standards, approvals, certificatesYesCE markYesUL approvalYescULusYesFM approvalYesRCM (formerly C-TICK)Yes  |   |   |
| • Limit class A, for use in industrial areasYes; Group 1<br>Yes; When appropriate measures are used to ensure compliance with the limits<br>for Class B according to EN 55011Degree and class of protectionIP20IP degree of protectionIP20Standards, approvals, certificatesYesCE markYesUL approvalYescULusYesFM approvalYesFM approvalYesRCM (formerly C-TICK)Yes   |   |   |
| • Limit class B, for use in residential areasYes; When appropriate measures are used to ensure compliance with the limits<br>for Class B according to EN 55011Degree and class of protectionIP degree of protectionIP degree of protectionIP20Standards, approvals, certificatesCE markYesUL approvalYescULusYesFM approvalYesFM approvalYesRCM (formerly C-TICK)Yes  | 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       IP20         Standards, approvals, certificates         CE mark       Yes         UL approval       Yes         cULus       Yes         FM approval       Yes         RCM (formerly C-TICK)       Yes  | • Limit class A, for use in industrial areas                    | Yes; Group 1  |
| Degree and class of protection         IP degree of protection       IP20         Standards, approvals, certificates         CE mark       Yes         UL approval       Yes         ULus       Yes         cULus       Yes         FM approval       Yes         RCM (formerly C-TICK)       Yes   | <ul> <li>Limit class B, for use in residential areas</li> </ul> |   |
| IP degree of protection     IP20       Standards, approvals, certificates     Yes       CE mark     Yes       UL approval     Yes       cULus     Yes       FM approval     Yes       RCM (formerly C-TICK)     Yes   |   | tor Class B according to EN 55011                                   |
| Standards, approvals, certificates         CE mark       Yes         UL approval       Yes         cULus       Yes         FM approval       Yes         RCM (formerly C-TICK)       Yes  |   |   |
| CE mark     Yes       UL approval     Yes       cULus     Yes       FM approval     Yes       RCM (formerly C-TICK)     Yes   |   | IP20  |
| UL approval     Yes       cULus     Yes       FM approval     Yes       RCM (formerly C-TICK)     Yes   | Standards, approvals, certificates                              |   |
| cULus     Yes       FM approval     Yes       RCM (formerly C-TICK)     Yes   | CE mark   | Yes   |
| FM approval     Yes       RCM (formerly C-TICK)     Yes   |   |   |
| RCM (formerly C-TICK) Yes   | cULus   |   |
|   | FM approval   | Yes   |
| KC approval Yes   |   |   |
|   | KC approval   | Yes   |

| Marine approval  | Yes   |
|--|---|
| Ambient conditions   |   |
|  |   |
| Free fall  |   |
| Fall height, max.  | 0.3 m; five times, in product package   |
| Ambient temperature during operation                             |   |
| • min.   | -20 °C  |
| • max.   | 60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical |
| <ul> <li>horizontal installation, min.</li> </ul>                | -20 °C  |
| <ul> <li>horizontal installation, max.</li> </ul>                | 60 °C   |
| <ul> <li>vertical installation, min.</li> </ul>                  | -20 °C  |
| <ul> <li>vertical installation, max.</li> </ul>                  | 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   |
| -  | 1 080 hPa   |
| Operation, max.     Storage/transport_min                        |   |
| Storage/transport, min.  | 660 hPa   |
| Storage/transport, max.  | 1 080 hPa   |
| Altitude during operation relating to sea level                  |   |
| <ul> <li>Installation altitude, min.</li> </ul>                  | -1 000 m  |
| <ul> <li>Installation altitude, max.</li> </ul>                  | 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual  |
| Relative humidity  |   |
| Operation, max.  | 95 %; no condensation   |
| Vibrations   |   |
| Vibration resistance during operation acc. to IEC 60068-<br>2-6  | 2 g (m/s <sup>2</sup> ) wall mounting, 1 g (m/s <sup>2</sup> ) DIN rail   |
| <ul> <li>Operation, tested according to IEC 60068-2-6</li> </ul> | 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   |
| Pollutant concentrations   |   |
| <ul> <li>SO2 at RH &lt; 60% without condensation</li> </ul>      | S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free  |
| configuration / header   |   |
| configuration / programming / header                             |   |
| Programming language   |   |
| — LAD  | Yes   |
| — FBD  | Yes   |
| — SCL  | Yes   |
| Know-how protection  |   |
| User program protection/password protection                      | Yes   |
| Copy protection  | Yes   |
|  | Yes   |
| Block protection   | 100   |
| Access protection  | Vee   |
| protection of confidential configuration data                    | Yes   |
| Protection level: Write protection                               | Yes   |
| Protection level: Read/write protection                          | Yes   |
| Protection level: Complete protection                            | Yes   |
| programming / cycle time monitoring / header                     |   |
| adjustable   | Yes   |
| Dimensions   |   |
| Width  | 90 mm   |
| Height   | 100 mm  |
| Depth  | 75 mm   |
| Weights  |   |
| Weight, approx.  | 385 g   |
|  | 5   |
| last modified:   | 8/7/2023 🖸  |