



Figure similar

SIPLUS S7-1200 SM 1223 16DI/16DQ based on 6ES7223-1BL32-0XB0 with conformal coating, -40...+70 °C, start up -25 °C, digital input/output 16 DI/16 DQ, 16 DI 24 V DC, sink/source, 16 DQ, transistor 0.5 A

| General information | |
|--|---|
| Product type designation | SM 1223, DI 16x24 V DC, DQ 16x24 V DC |
| based on | 6ES7223-1BL32-0XB0 |
| Supply voltage | |
| Rated value (DC) | 24 V |
| permissible range, lower limit (DC) | 20.4 V |
| permissible range, upper limit (DC) | 28.8 V |
| Input current | |
| from backplane bus 5 V DC, max. | 185 mA |
| Digital inputs | |
| <ul style="list-style-type: none"> from load voltage L+ (without load), max. | 4 mA; per channel |
| output voltage / header | |
| supply voltage of the transmitters / header | |
| <ul style="list-style-type: none"> present | Yes |
| Power loss | |
| Power loss, typ. | 4.5 W |
| Digital inputs | |
| Number of digital inputs | 16 |
| <ul style="list-style-type: none"> in groups of | 2 |
| Input characteristic curve in accordance with IEC 61131, type 1 | Yes |
| Number of simultaneously controllable inputs | |
| all mounting positions | |
| — up to 40 °C, max. | 16 |
| horizontal installation | |
| — up to 40 °C, max. | 16 |
| — up to 50 °C, max. | 16 |
| vertical installation | |
| — up to 40 °C, max. | 16 |
| Input voltage | |
| <ul style="list-style-type: none"> Type of input voltage Rated value (DC) for signal "0" for signal "1" | DC 24 V 5 V DC at 1 mA 15 V DC at 2.5 mA |
| Input current | |
| <ul style="list-style-type: none"> for signal "0", max. (permissible quiescent current) for signal "1", min. for signal "1", typ. | 1 mA 2.5 mA 4 mA |
| Input delay (for rated value of input voltage) | |
| for standard inputs | |

| | |
|--|---|
| — parameterizable | Yes; 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four |
| for interrupt inputs | |
| — parameterizable | Yes |
| Cable length | |
| • shielded, max. | 500 m |
| • unshielded, max. | 300 m |
| Digital outputs | |
| Number of digital outputs | 16 |
| • in groups of | 1 |
| Short-circuit protection | No; to be provided externally |
| Limitation of inductive shutdown voltage to | L+ (-48 V) |
| Switching capacity of the outputs | |
| • with resistive load, max. | 0.5 A |
| • on lamp load, max. | 5 W |
| Output voltage | |
| • Rated value (DC) | 24 V |
| • for signal "0", max. | 0.1 V; with 10 kOhm load |
| • for signal "1", min. | 20 V DC |
| Output current | |
| • for signal "1" rated value | 0.5 A |
| • for signal "1" permissible range, max. | 0.5 A |
| • for signal "0" residual current, max. | 10 µA |
| Output delay with resistive load | |
| • "0" to "1", max. | 50 µs |
| • "1" to "0", max. | 200 µs |
| Total current of the outputs (per group) | |
| horizontal installation | |
| — up to 50 °C, max. | 8 A; Current per mass |
| Relay outputs | |
| Switching capacity of contacts | |
| — with inductive load, max. | 0.5 A |
| — on lamp load, max. | 5 W |
| — with resistive load, max. | 0.5 A |
| Cable length | |
| • shielded, max. | 500 m |
| • unshielded, max. | 150 m |
| Interrupts/diagnostics/status information | |
| Alarms | Yes |
| Diagnostics function | Yes |
| Alarms | |
| • Diagnostic alarm | Yes |
| Diagnostics indication LED | |
| • for status of the inputs | Yes |
| • for status of the outputs | Yes |
| • for maintenance | Yes |
| Potential separation | |
| Potential separation digital inputs | |
| • between the channels, in groups of | 2 |
| Potential separation digital outputs | |
| • between the channels, in groups of | 1 |
| • between the channels and backplane bus | 500 V AC |
| Degree and class of protection | |
| IP degree of protection | IP20 |
| Standards, approvals, certificates | |
| Ecological footprint | |
| • environmental product declaration | Yes |
| Global warming potential | |
| — global warming potential, (total) [CO2 eq] | 123 kg |
| — global warming potential, (during production) [CO2 eq] | 12.1 kg |

| | |
|--|-----------|
| — global warming potential, (during operation) [CO2 eq] | 111 kg |
| — global warming potential, (after end of life cycle) [CO2 eq] | -0.434 kg |

Ambient conditions

| | |
|---|---|
| Free fall | |
| • Fall height, max. | 0.3 m; five times, in product package |
| Ambient temperature during operation | |
| • min. | -40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C |
| • max. | 70 °C; = Tmax; Tmax > +60 °C number of simultaneously activated outputs 8, inputs 8 (no adjacent points) for horizontal mounting position |
| • At cold restart, min. | -25 °C |
| Ambient temperature during storage/transportation | |
| • min. | -40 °C |
| • max. | 70 °C |
| Altitude during operation relating to sea level | |
| • Installation altitude above sea level, max. | 5 000 m |
| • Ambient air temperature-barometric pressure-altitude | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) |
| Relative humidity | |
| • With condensation, tested in accordance with IEC 60068-2-38, max. | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) |
| Resistance | |
| Coolants and lubricants | |
| — Resistant to commercially available coolants and lubricants | Yes |
| Use in stationary industrial systems | |
| — to biologically active substances according to EN 60721-3-3 | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request |
| — to chemically active substances according to EN 60721-3-3 | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * |
| — to mechanically active substances according to EN 60721-3-3 | Yes; Class 3S4 incl. sand, dust, * |
| Use on ships/at sea | |
| — to biologically active substances according to EN 60721-3-6 | Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request |
| — to chemically active substances according to EN 60721-3-6 | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * |
| — to mechanically active substances according to EN 60721-3-6 | Yes; Class 6S3 incl. sand, dust; * |
| Usage in industrial process technology | |
| — Against chemically active substances acc. to EN 60654-4 | Yes; Class 3 (excluding trichlorethylene) |
| — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 | Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) |
| Remark | |
| — Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 | * The supplied plug covers must remain in place over the unused interfaces during operation! |

| | |
|---|--|
| Conformal coating | |
| • Coatings for printed circuit board assemblies acc. to EN 61086 | Yes; Class 2 for high reliability |
| • Protection against fouling acc. to EN 60664-3 | Yes; Type 1 protection |
| • Military testing according to MIL-I-46058C, Amendment 7 | Yes; Discoloration of coating possible during service life |
| • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A | Yes; Conformal coating, Class A |

connection method

| | |
|--------------------------|-----|
| required front connector | Yes |
|--------------------------|-----|

Mechanics/material

| | |
|----------------------------|-----|
| Enclosure material (front) | |
| • Plastic | Yes |

Dimensions

| | |
|--------|--------|
| Width | 70 mm |
| Height | 100 mm |

| | | | |
|-----------------|--------|---------|----------------|
| Depth | 75 mm | | |
| Weights | | | |
| Weight, approx. | 310 g | | |
| Classifications | | | |
| | | Version | Classification |
| | eClass | 14 | 27-24-22-04 |
| | eClass | 12 | 27-24-22-04 |
| | eClass | 9.1 | 27-24-22-04 |
| | eClass | 9 | 27-24-22-04 |
| | eClass | 8 | 27-24-22-04 |
| | eClass | 7.1 | 27-24-22-04 |
| | eClass | 6 | 27-24-22-04 |
| | ETIM | 9 | EC001419 |
| | ETIM | 8 | EC001419 |
| | ETIM | 7 | EC001419 |
| | IDEA | 4 | 3566 |
| | UNSPSC | 15 | 32-15-17-05 |


Approvals / Certificates


| | |
|--------------------------|-----|
| General Product Approval | EMV |
|--------------------------|-----|

Miscellaneous


EG-Konf.

[Manufacturer Declaration](#)




UL

[KC](#)

| EMV | For use in hazardous locations | | | Maritime application | Environment |
|--|--|---|--|--|--|
|  RCM |  IECEX |  ATEX |  CCC |  DNV |  EPD |

last modified:

10/9/2024 