



Figure similar

SIPLUS S7-1200 SM 1223 8DI/8DQ based on 6ES7223-1BH32-0XB0 with conformal coating, -40...+70 °C, start up -25 °C, digital input/output SM 1223, 8 DI/8 DQ, 8 DI 24 V DC, sink/source, 8 DQ, transistor 0.5 A

| General information                                                                                                                                                |                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Product type designation                                                                                                                                           | SM 1223, DI 8x24 V DC, DQ 8x24 V DC         |
| based on                                                                                                                                                           | <a href="#">6ES7223-1BH32-0XB0</a>          |
| 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.                                                                                                                                    | 145 mA                                      |
| Digital inputs                                                                                                                                                     |                                             |
| <ul style="list-style-type: none"> <li>from load voltage L+ (without load), max.</li> </ul>                                                                        | 4 mA; per channel                           |
| Output voltage                                                                                                                                                     |                                             |
| Power supply to the transmitters                                                                                                                                   |                                             |
| <ul style="list-style-type: none"> <li>present</li> </ul>                                                                                                          | Yes                                         |
| Power loss                                                                                                                                                         |                                             |
| Power loss, typ.                                                                                                                                                   | 2.5 W                                       |
| Digital inputs                                                                                                                                                     |                                             |
| Number of digital inputs                                                                                                                                           | 8                                           |
| <ul style="list-style-type: none"> <li>in groups of</li> </ul>                                                                                                     | 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.                                                                                                                                                | 8                                           |
| horizontal installation                                                                                                                                            |                                             |
| — up to 40 °C, max.                                                                                                                                                | 8                                           |
| — up to 50 °C, max.                                                                                                                                                | 8                                           |
| vertical installation                                                                                                                                              |                                             |
| — up to 40 °C, max.                                                                                                                                                | 8                                           |
| Input voltage                                                                                                                                                      |                                             |
| <ul style="list-style-type: none"> <li>Rated value (DC)</li> <li>for signal "0"</li> <li>for signal "1"</li> </ul>                                                 | 24 V<br>5 V DC at 1 mA<br>15 V DC at 2.5 mA |
| Input current                                                                                                                                                      |                                             |
| <ul style="list-style-type: none"> <li>for signal "0", max. (permissible quiescent current)</li> <li>for signal "1", min.</li> <li>for signal "1", typ.</li> </ul> | 1 mA<br>2.5 mA<br>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                                                                                         |
| <b>Digital outputs</b>                                         |                                                                                               |
| Number of digital outputs                                      | 8                                                                                             |
| • 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.                                            | 4 A; Current per mass                                                                         |
| Cable length                                                   |                                                                                               |
| • shielded, max.                                               | 500 m                                                                                         |
| • unshielded, max.                                             | 150 m                                                                                         |
| <b>Interrupts/diagnostics/status information</b>               |                                                                                               |
| Alarms                                                         |                                                                                               |
| • Diagnostic alarm                                             | Yes                                                                                           |
| Diagnostics indication LED                                     |                                                                                               |
| • for status of the inputs                                     | Yes                                                                                           |
| • for status of the outputs                                    | Yes                                                                                           |
| <b>Potential separation</b>                                    |                                                                                               |
| 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                                                                                      |
| <b>Degree and class of protection</b>                          |                                                                                               |
| IP degree of protection                                        | IP20                                                                                          |
| <b>Standards, approvals, certificates</b>                      |                                                                                               |
| 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                                                                                     |
| <b>Ambient conditions</b>                                      |                                                                                               |
| Free fall                                                      |                                                                                               |
| • Fall height, max.                                            | 0.3 m; five times, in product package                                                         |

|                                                                                                                         |                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ambient temperature during operation</b>                                                                             |                                                                                                                                                                                                                 |
| • min.                                                                                                                  | -40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C                                                                                                                                                    |
| • max.                                                                                                                  | 70 °C; = Tmax; Tmax > +60 °C number of simultaneously activated outputs 4, inputs 4 (no adjacent points) for horizontal mounting position                                                                       |
| • At cold restart, min.                                                                                                 | -25 °C                                                                                                                                                                                                          |
| <b>Ambient temperature during storage/transportation</b>                                                                |                                                                                                                                                                                                                 |
| • min.                                                                                                                  | -40 °C                                                                                                                                                                                                          |
| • max.                                                                                                                  | 70 °C                                                                                                                                                                                                           |
| <b>Altitude during operation relating to sea level</b>                                                                  |                                                                                                                                                                                                                 |
| • 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) |
| <b>Relative humidity</b>                                                                                                |                                                                                                                                                                                                                 |
| • With condensation, tested in accordance with IEC 60068-2-38, max.                                                     | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions)                                                                                                                             |
| <b>Resistance</b>                                                                                                       |                                                                                                                                                                                                                 |
| <b>Coolants and lubricants</b>                                                                                          |                                                                                                                                                                                                                 |
| — Resistant to commercially available coolants and lubricants                                                           | Yes; Incl. diesel and oil droplets in the air                                                                                                                                                                   |
| <b>Use in stationary industrial systems</b>                                                                             |                                                                                                                                                                                                                 |
| — 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, *                                                                                                                                                                              |
| <b>Use on ships/at sea</b>                                                                                              |                                                                                                                                                                                                                 |
| — 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; *                                                                                                                                                                              |
| <b>Usage in industrial process technology</b>                                                                           |                                                                                                                                                                                                                 |
| — 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)                             |
| <b>Remark</b>                                                                                                           |                                                                                                                                                                                                                 |
| — 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!                                                                                                                    |
| <b>Conformal coating</b>                                                                                                |                                                                                                                                                                                                                 |
| • 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                                                                                                                                                                                 |
| <b>Connection method</b>                                                                                                |                                                                                                                                                                                                                 |
| required front connector                                                                                                | Yes                                                                                                                                                                                                             |
| <b>Mechanics/material</b>                                                                                               |                                                                                                                                                                                                                 |
| Enclosure material (front)                                                                                              |                                                                                                                                                                                                                 |
| • Plastic                                                                                                               | Yes                                                                                                                                                                                                             |
| <b>Dimensions</b>                                                                                                       |                                                                                                                                                                                                                 |
| Width                                                                                                                   | 45 mm                                                                                                                                                                                                           |
| Height                                                                                                                  | 100 mm                                                                                                                                                                                                          |
| Depth                                                                                                                   | 75 mm                                                                                                                                                                                                           |
| <b>Weights</b>                                                                                                          |                                                                                                                                                                                                                 |
| Weight, approx.                                                                                                         | 210 g                                                                                                                                                                                                           |
| <b>Classifications</b>                                                                                                  |                                                                                                                                                                                                                 |

|        | Version | Classification |
|--------|---------|----------------|
| eClass | 16      | 27-24-22-04    |
| 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   | 10      | EC001419       |
| ETIM   | 9       | EC001419       |
| ETIM   | 8       | EC001419       |
| ETIM   | 7       | EC001419       |
| IDEA   | 4       | 3566           |
| UNSPSC | 15      | 32-15-17-05    |

Approvals / Certificates

General Product Approval


[Manufacturer Declaration](#)



[China RoHS](#)





General Product Approval

EMV

For use in hazardous locations

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For use in hazardous locations

Maritime application

Environment



[CCC-Ex](#)





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