SIEMENS

## Data sheet 6ES7223-5PH50-0XB0



Figure similar

SIMATIC S7-1200 G2: SM 1223 digital I/O, 8 DI/8 RLY; inputs: 8x DI 24 V DC sink/source; outputs: 8x DO relay 2 A

| | |
|---|---|
| **General information** | |
| Product type designation | SM 1223, DI 8x 24 V DC, DQ 8x relay |
| **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. | 105 mA |
| Digital inputs | |
| ● from load voltage L+ (without load), max. | 4.1 mA; per channel |
| Digital outputs | |
| ● from load voltage L+, max. | 9 mA; per relay coil |
| **Power loss** | |
| Power loss, typ. | 4.8 W |
| **Digital inputs** | |
| Number of digital inputs | 8 |
| ● in groups of | 4 |
| 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 | |
| ● Type of input voltage | DC |
| ● Rated value (DC) | 24 V |
| ● for signal "0" | 5 V DC or 0.5 mA |
| ● for signal "1" | 15 V DC at 2.5 mA |
| Input current | |
| ● for signal "0", max. (permissible quiescent current) | 1 mA |
| ● for signal "1", min. | 2.5 mA |
| ● for signal "1", typ. | 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 |


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| | |
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| for interrupt inputs | |
| — parameterizable | No |
| Cable length | |
| ● shielded, max. | 500 m |
| ● unshielded, max. | 300 m |
| **Digital outputs** | |
| Number of digital outputs | 8 |
| ● in groups of | 8 |
| Short-circuit protection | No; to be provided externally |
| Switching capacity of the outputs | |
| ● with resistive load, max. | 2 A |
| ● on lamp load, max. | 30 W with DC, 200 W with AC |
| Output voltage | |
| ● Rated value (DC) | 5 V DC to 30 V DC |
| ● Rated value (AC) | 5 V AC to 250 V AC |
| Output current | |
| ● for signal "1" rated value | 2 A |
| Output delay with resistive load | |
| ● "0" to "1", max. | 10 ms |
| ● "1" to "0", max. | 10 ms |
| Total current of the outputs (per group) | |
| horizontal installation | |
| — up to 50 °C, max. | 16 A; Current per mass |
| Relay outputs | |
| ● Number of relay outputs | 8 |
| ● Rated supply voltage of relay coil L+ (DC) | 24 V |
| ● Number of operating cycles, max. | mechanically 10 million, at rated load voltage 100 000 |
| Switching capacity of contacts | |
| — with inductive load, max. | 2 A |
| — on lamp load, max. | 30 W with DC, 200 W with AC |
| — with resistive load, max. | 2 A |
| Cable length | |
| ● shielded, max. | 500 m |
| ● unshielded, max. | 150 m |
| **Interrupts/diagnostics/status information** | |
| Diagnostics function | Yes |
| Alarms | |
| ● Diagnostic alarm | Yes |
| Diagnoses | |
| ● Monitoring the supply voltage | 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 | 4 |
| ● between the channels and backplane bus | Yes; 707 V DC (type test) |
| Potential separation digital outputs | |
| ● between the channels | Relays |
| ● between the channels, in groups of | 8 |
| ● between the channels and backplane bus | Yes; 4 200 V DC (type test) |
| **Isolation** | |
| Isolation tested with | 1500 V AC (type test) |
| **Degree and class of protection** | |
| IP degree of protection | IP20 |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| CSA approval | No |
| UL approval | Yes |


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|---|---|
| cULus | Yes |
| FM approval | No |
| RCM (formerly C-TICK) | Yes |
| KC approval | No |
| Marine approval | No |
| **Ambient conditions** | |
| Free fall | |
| ● Fall height, max. | 0.3 m; five times, in product package |
| Ambient temperature during operation | |
| ● min. | -20 °C; No condensation |
| ● max. | 40 °C; at max. voltages and max. specifications |
| ● horizontal installation, min. | -20 °C; No condensation |
| ● horizontal installation, max. | 60 °C; at rated voltages, 50 % of max. specification and alternate IO active |
| ● vertical installation, min. | -20 °C; No condensation |
| ● vertical installation, max. | 50 °C; at rated voltages, 50 % of max. specification and alternate IO active |
| ● permissible temperature change | 5°C to 55°C, 3°C / minute |
| Ambient temperature during storage/transportation | |
| ● min. | -40 °C |
| ● max. | 70 °C |
| Air pressure acc. to IEC 60068-2-13 | |
| ● Operation, min. | 540 hPa |
| ● Operation, max. | 1 140 hPa |
| ● Storage/transport, min. | 540 hPa |
| ● Storage/transport, max. | 1 140 hPa |
| Altitude during operation relating to sea level | |
| ● Installation altitude, min. | -1 000 m |
| ● Installation altitude, max. | 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual |
| Relative humidity | |
| ● Operation at 25 °C without condensation, max. | 95 % |
| Vibrations | |
| ● Vibration resistance during operation acc. to IEC 60068-2-6 | 3.5 mm from 5 - 8.4 Hz, 1g from 8.4 - 150 Hz |
| ● Operation, tested according to IEC 60068-2-6 | 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 | |
| ● SO2 at RH < 60% without condensation | S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free |
| **connection method** | |
| required front connector | No |
| **Mechanics/material** | |
| Enclosure material (front) | |
| ● Plastic | Yes |
| **Dimensions** | |
| Width | 30 mm |
| Height | 125 mm |
| Depth | 100 mm |
| **Weights** | |
| Weight, approx. | 194 g |

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