SIEMENS

## Data sheet 6ES7223-1QH32-0XB0

| | SIMATIC S7-1200, Digital I/O SM 1223, 8 DI AC/8 DO RLY, 8 DI 120/230 V AC, 8 DO relay 2 A |
|---|---|
| **General information** | |
| Product type designation | SM 1223, DI 8x120/230 V AC, 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. | 120 mA |
| **Output voltage** | |
| Power supply to the transmitters | |
| ● present | Yes |
| **Power loss** | |
| Power loss, typ. | 7.5 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 | |
| ● Rated value (AC) | 120/230 V AC |
| ● for signal "0" | 20 V AC at 1 mA |
| ● for signal "1" | 79 V AC 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. | 9 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 | 8 |
| ● in groups of | 4 |
| 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 |


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| | |
|---|---|
| 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 |
| ● for signal "1" permissible range, max. | 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. | 8 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** | |
| Alarms | |
| ● Diagnostic alarm | Yes |
| Diagnostics indication LED | |
| ● for status of the inputs | Yes |
| ● for status of the outputs | Yes |
| **Potential separation** | |
| Potential separation digital inputs | |
| ● between the channels, in groups of | 2 |
| Potential separation digital outputs | |
| ● between the channels | Relays |
| ● between the channels, in groups of | 2 |
| ● between the channels and backplane bus | 1 500 V AC for 1 minute |
| **Permissible potential difference** | |
| between different circuits | 750 V AC for 1 minute |
| **Degree and class of protection** | |
| IP degree of protection | IP20 |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| CSA approval | Yes |
| UL approval | Yes |
| cULus | Yes |
| FM approval | Yes |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| Marine approval | Yes |
| 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 |


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| 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 outputs: 4 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 at 55 °C horizontal or 45 °C vertical |
| ● horizontal installation, min. | -20 °C |
| ● horizontal installation, max. | 60 °C |
| ● vertical installation, min. | -20 °C |
| ● vertical installation, max. | 50 °C |
| ● 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 | |
| ● Storage/transport, min. | 660 hPa |
| ● Storage/transport, max. | 1 080 hPa |
| Relative humidity | |
| ● Operation at 25 °C without condensation, max. | 95 % |
| **Connection method** | |
| required front connector | Yes |
| **Mechanics/material** | |
| Enclosure material (front) | |
| ● Plastic | Yes |
| **Dimensions** | |
| Width | 45 mm |
| Height | 100 mm |
| Depth | 75 mm |
| **Weights** | |
| Weight, approx. | 230 g |

**Classifications**

| | 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**

CE EG-Konf. | UKCA | Miscellaneous | Manufacturer Declaration | UL | RCM

| General Product Approval | EMV | For use in hazardous locations |
|---|---|---|


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China RoHS | Manufacturer Declaration | FM

| Maritime application | | | | | Environment |
|---|---|---|---|---|---|
| NK / Nippon Kaiji Kyokai | CCS (China Classification Society) | KR (Korean Register of Shipping) | | | |

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