



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 / header  |   |
| supply voltage of the transmitters / header  |   |
| <ul style="list-style-type: none"> <li>product function / supply voltage for transmitters</li> </ul>   | Yes   |
| Power loss   |   |
| Power loss, typ.   | 7.5 W   |
| Digital inputs   |   |
| Number of digital inputs   | 8   |
| <ul style="list-style-type: none"> <li>in groups of</li> </ul>   | 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  |   |
| <ul style="list-style-type: none"> <li>Type of input voltage</li> <li>Rated value (AC)</li> <li>for signal "0"</li> <li>for signal "1"</li> </ul>                  | AC<br>120/230 V AC<br>20 V AC at 1 mA<br>79 V AC 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>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   |

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| <b>Cable length</b>                              |  |
| • shielded, max.                                 | 500 m  |
| • unshielded, max.                               | 300 m  |
| <b>Digital outputs</b>                           |  |
| Number of digital outputs                        | 8  |
| • in groups of                                   | 4  |
| Short-circuit protection                         | No; to be provided externally                          |
| <b>Switching capacity of the outputs</b>         |  |
| • with resistive load, max.                      | 2 A  |
| • on lamp load, max.                             | 30 W with DC, 200 W with AC                            |
| <b>Output voltage</b>                            |  |
| • Rated value (DC)                               | 5 V DC to 30 V DC                                      |
| • Rated value (AC)                               | 5 V AC to 250 V AC                                     |
| <b>Output current</b>                            |  |
| • for signal "1" rated value                     | 2 A  |
| • for signal "1" permissible range, max.         | 2 A  |
| <b>Output delay with resistive load</b>          |  |
| • "0" to "1", max.                               | 10 ms  |
| • "1" to "0", max.                               | 10 ms  |
| <b>Total current of the outputs (per group)</b>  |  |
| horizontal installation                          |  |
| — up to 50 °C, max.                              | 8 A; Current per mass                                  |
| <b>Relay outputs</b>                             |  |
| • 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 |
| <b>Switching capacity of contacts</b>            |  |
| — with inductive load, max.                      | 2 A  |
| — on lamp load, max.                             | 30 W with DC, 200 W with AC                            |
| — with resistive load, max.                      | 2 A  |
| <b>Cable length</b>                              |  |
| • shielded, max.                                 | 500 m  |
| • unshielded, max.                               | 150 m  |
| <b>Interrupts/diagnostics/status information</b> |  |
| <b>Alarms</b>                                    |  |
| • Diagnostic alarm                               | Yes  |
| <b>Diagnostics indication LED</b>                |  |
| • for status of the inputs                       | Yes  |
| • for status of the outputs                      | Yes  |
| <b>Potential separation</b>                      |  |
| <b>Potential separation digital inputs</b>       |  |
| • between the channels, in groups of             | 2  |
| <b>Potential separation digital outputs</b>      |  |
| • between the channels                           | Relays   |
| • between the channels, in groups of             | 2  |
| • between the channels and backplane bus         | 1 500 V AC for 1 minute                                |
| <b>Permissible potential difference</b>          |  |
| between different circuits                       | 750 V AC for 1 minute                                  |
| <b>Degree and class of protection</b>            |  |
| IP degree of protection                          | IP20   |
| <b>Standards, approvals, certificates</b>        |  |
| 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  |
| <b>Ambient conditions</b>                        |  |

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|--|--|
| <b>Free fall</b>   |  |
| • Fall height, max.                                      | 0.3 m; five times, in product package  |
| <b>Ambient temperature during operation</b>              |  |
| • 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  |
| <b>Ambient temperature during storage/transportation</b> |  |
| • min.   | -40 °C   |
| • max.   | 70 °C  |
| <b>Air pressure acc. to IEC 60068-2-13</b>               |  |
| • Storage/transport, min.                                | 660 hPa  |
| • Storage/transport, max.                                | 1 080 hPa  |
| <b>Relative humidity</b>                                 |  |
| • Operation at 25 °C without condensation, max.          | 95 %   |
| <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.  | 230 g  |

**last modified:** 4/1/2022 