




Figure similar

SIMATIC S7-1200, Digital I/O SM 1223, 16 DI/16 DO, 16 DI 24 V DC, Sink/Source, 16 DO, transistor 0.5 A

| General information  |  |
|--|--|
| Product type designation   | SM 1223, DI 16x24 V DC, DQ 16x24 V DC  |
| 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"> <li>from load voltage L+ (without load), max.</li> </ul>  | 4 mA; per channel  |
| output voltage / header  |  |
| supply voltage of the transmitters / header  |  |
| <ul style="list-style-type: none"> <li>present</li> </ul>  | Yes  |
| Power loss   |  |
| Power loss, typ.   | 4.5 W  |
| Digital inputs   |  |
| Number of digital inputs   | 16   |
| <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   |  |
| <ul style="list-style-type: none"> <li>up to 40 °C, max.</li> </ul>  | 16   |
| horizontal installation  |  |
| <ul style="list-style-type: none"> <li>up to 40 °C, max.</li> <li>up to 50 °C, max.</li> </ul>   | 16   |
| vertical installation  |  |
| <ul style="list-style-type: none"> <li>up to 40 °C, max.</li> </ul>  | 16   |
| Input voltage  |  |
| <ul style="list-style-type: none"> <li>Type of input voltage</li> <li>Rated value (DC)</li> <li>for signal "0"</li> <li>for signal "1"</li> </ul>                  | DC<br>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  |  |
| <ul style="list-style-type: none"> <li>parameterizable</li> </ul>  | 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                        | 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                         |
| <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>        |                               |
| 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>                        |                               |

|  |   |
|--|---|
| <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   |
| • 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  | 70 mm   |
| Height   | 100 mm  |
| Depth  | 75 mm   |
| <b>Weights</b>   |   |
| Weight, approx.  | 310 g   |
| <b>last modified:</b>                                    | 3/12/2024  |