



Figure similar

SIMATIC S7-1200, Digital I/O SM 1223, 8 DI/8 DO, 8 DI 24 V DC, Sink/Source, 8 DO, relay 2 A

| General information                                             |                                                                                |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------|
| Product type designation                                        | SM 1223, DI 8x24 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.                                 | 145 mA                                                                         |
| Digital inputs                                                  |                                                                                |
| • from load voltage L+ (without load), max.                     | 4 mA/input 11 mA/relay                                                         |
| Output voltage                                                  |                                                                                |
| Power supply to the transmitters                                |                                                                                |
| • present                                                       | Yes                                                                            |
| Power loss                                                      |                                                                                |
| Power loss, typ.                                                | 5.5 W                                                                          |
| Digital inputs                                                  |                                                                                |
| Number of digital inputs                                        | 8                                                                              |
| • in groups of                                                  | 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                                                   |                                                                                |
| • Rated value (DC)                                              | 24 V                                                                           |
| • for signal "0"                                                | 5 V DC at 1 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                                         |
| 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                                   | 2                                                      |
| 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                                                    |
| • 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.                              | 10 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                                                  |
| <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                           | 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                                   |         |                |
| 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                             |         |                |
| 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                                 |         |                |
| • 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



[Miscellaneous](#)



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

[China RoHS](#)

[Manufacturer Declaration](#)



[EM](#)



| Maritime application | Environment |
|----------------------|-------------|
|----------------------|-------------|



[NK / Nippon Kaiji Kyokai](#)



[KR \(Korean Register of Shipping\)](#)



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4/6/2025