

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

| | |
|---|------------------------|
| <ul style="list-style-type: none"> from load voltage L+ (without load), max. | 4 mA/input 11 mA/relay |
|---|------------------------|

Output voltage

Power supply to the transmitters

| | |
|---|-----|
| <ul style="list-style-type: none"> 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 | |
| • Type of input voltage | DC |
| • 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 |
| Digital outputs | |
| Number of digital outputs | |
| • 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" permissible range, max. | 2 A |

| | |
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| 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 |
| 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 | 1500 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 |

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 |
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Mechanics/material

Enclosure material (front)

- Plastic Yes

Dimensions

| | |
|--------|--------|
| Width | 45 mm |
| Height | 100 mm |
| Depth | 75 mm |

Weights

| | |
|-----------------|-------|
| Weight, approx. | 230 g |
|-----------------|-------|

last modified: 12/10/2019