



SIMATIC S7-1200, Digital I/O SB 1223, 2 DI/2 DO, 2 DI 24 V DC/2 DO 24 V DC

| General information                                             |                                                                                               |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Product type designation                                        | SB 1223, DI 2x24 V DC/DQ 2x24 V DC                                                            |
| Supply voltage                                                  |                                                                                               |
| permissible range, lower limit (DC)                             | 20.4 V                                                                                        |
| permissible range, upper limit (DC)                             | 28.8 V                                                                                        |
| Input current                                                   |                                                                                               |
| from backplane bus 5 V DC, typ.                                 | 50 mA                                                                                         |
| output voltage / header                                         |                                                                                               |
| supply voltage of the transmitters / header                     |                                                                                               |
| • Supply current, max.                                          | 4 mA; per channel                                                                             |
| Power loss                                                      |                                                                                               |
| Power loss, typ.                                                | 1 W                                                                                           |
| Digital inputs                                                  |                                                                                               |
| Number of digital inputs                                        | 2; Current-sinking                                                                            |
| • in groups of                                                  | 1                                                                                             |
| Input characteristic curve in accordance with IEC 61131, type 1 | Yes                                                                                           |
| Number of simultaneously controllable inputs                    |                                                                                               |
| all mounting positions                                          |                                                                                               |
| — up to 40 °C, max.                                             | 2                                                                                             |
| Input voltage                                                   |                                                                                               |
| • Type of input voltage                                         | DC                                                                                            |
| • Rated value (DC)                                              | 24 V                                                                                          |
| • for signal "0"                                                | 0 to 5 V                                                                                      |
| • for signal "1"                                                | +15 to +30 V                                                                                  |
| Input current                                                   |                                                                                               |
| • for signal "0", max. (permissible quiescent current)          | 1 mA                                                                                          |
| • for signal "1", typ.                                          | 7 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 |
| — at "0" to "1", max.                                           | 2 µs                                                                                          |
| — at "1" to "0", max.                                           | 10 µs                                                                                         |
| for interrupt inputs                                            |                                                                                               |
| — parameterizable                                               | Yes                                                                                           |
| for technological functions                                     |                                                                                               |
| — parameterizable                                               | Yes                                                                                           |
| Cable length                                                    |                                                                                               |
| • shielded, max.                                                | 50 m                                                                                          |
| Digital outputs                                                 |                                                                                               |

|                                                   |                                                                                               |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Number of digital outputs                         | 2; MOSFET, solid-state (current-sinking/current-sourcing)                                     |
| • in groups of                                    | 1                                                                                             |
| Short-circuit protection                          | No                                                                                            |
| Switching capacity of the outputs                 |                                                                                               |
| • with resistive load, max.                       | 0.5 A                                                                                         |
| • on lamp load, max.                              | 5 W                                                                                           |
| Load resistance range                             |                                                                                               |
| • upper limit                                     | 0.6 $\Omega$                                                                                  |
| Output voltage                                    |                                                                                               |
| • Rated value (DC)                                | 24 V                                                                                          |
| • for signal "0", max.                            | 0.1 V; with 10 kOhm load                                                                      |
| • for signal "1", min.                            | 20 V                                                                                          |
| Output current                                    |                                                                                               |
| • for signal "1" permissible range, max.          | 0.5 A                                                                                         |
| • for signal "0" residual current, max.           | 10 $\mu$ A                                                                                    |
| Cable length                                      |                                                                                               |
| • shielded, max.                                  | 50 m                                                                                          |
| Interrupts/diagnostics/status information         |                                                                                               |
| Alarms                                            | Yes                                                                                           |
| Diagnostics function                              | Yes                                                                                           |
| Diagnostics indication LED                        |                                                                                               |
| • for status of the inputs                        | Yes                                                                                           |
| • for status of the outputs                       | Yes                                                                                           |
| 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                                                                                         |
| 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 %                                                                                          |
| Mechanics/material                                |                                                                                               |
| Enclosure material (front)                        |                                                                                               |
| • Plastic                                         | Yes                                                                                           |
| Dimensions                                        |                                                                                               |
| Width                                             | 38 mm                                                                                         |
| Height                                            | 62 mm                                                                                         |
| Depth                                             | 21 mm                                                                                         |
| Weights                                           |                                                                                               |
| Weight, approx.                                   | 40 g                                                                                          |
| last modified:                                    | 3/12/2024  |

