

# SIEMENS

## Product data sheet

**6ES7223-1PL30-0XB0**


SIMATIC S7-1200, DIGITAL I/O SM 1223,  
16DI / 16DO, 16DI DC 24 V, SINK/SOURCE,  
16DO, RELAY 2A

| Supply voltage                            |                        |
|-------------------------------------------|------------------------|
| 24 V DC                                   | Yes                    |
| 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.           | 180 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 losses                              |                        |
| Power loss, typ.                          | 10 W                   |
| Digital inputs                            |                        |
| Number/binary inputs                      | 16                     |

|                                                      |                                                                               |
|------------------------------------------------------|-------------------------------------------------------------------------------|
| In groups of                                         | 2                                                                             |
| Input characteristic curve acc. to IEC 61131, Type 1 | Yes                                                                           |
| Number of simultaneously controllable inputs         |                                                                               |
| all mounting positions                               |                                                                               |
| up to 40 °C, max.                                    | 16                                                                            |
| horizontal installation                              |                                                                               |
| up to 40 °C, max.                                    | 16                                                                            |
| up to 50 °C, max.                                    | 16                                                                            |
| vertical installation                                |                                                                               |
| up to 40 °C, max.                                    | 16                                                                            |
| 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 ; Typical                                                                |
| Input delay (for rated value of input voltage)       |                                                                               |
| for standard inputs                                  |                                                                               |
| Parameterizable                                      | Yes ; 0.2, 0.4, 0.8, 1.6, 3.2, 6.4, and 12.8 ms, selectable in groups of four |
| for interrupt inputs                                 |                                                                               |
| Parameterizable                                      | Yes                                                                           |
| Cable length                                         |                                                                               |
| Cable length, shielded, max.                         | 500 m                                                                         |
| Cable length unshielded, max.                        | 300 m                                                                         |
| Digital outputs                                      |                                                                               |
| Number/binary outputs                                | 16                                                                            |
| In groups of                                         | 4                                                                             |
| Functionality/short-circuit strength                 | No ; to be provided externally                                                |
| Switching capacity of the outputs                    |                                                                               |
| with resistive load, max.                            | 2 A                                                                           |

|                                                    |                                                        |
|----------------------------------------------------|--------------------------------------------------------|
| on lamp load, max.                                 | 30 W DC ; 200 W AC                                     |
| <b>Output voltage</b>                              |                                                        |
| Rated value (AC)                                   | 5 to 250 V AC                                          |
| Rated value (DC)                                   | 5 to 30 V AC                                           |
| <b>Output current</b>                              |                                                        |
| 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>Aggregate current of outputs (per group)</b>    |                                                        |
| <b>horizontal installation</b>                     |                                                        |
| up to 50 °C, max.                                  | 8 A ; Current per mass                                 |
| <b>Relay outputs</b>                               |                                                        |
| Number of relay outputs                            | 16                                                     |
| Rated input 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 DC ; 200 W AC                                     |
| Switching frequency/contacts/at ohmic load/maximum | 2 A                                                    |
| <b>Cable length</b>                                |                                                        |
| Cable length, shielded, max.                       | 500 m                                                  |
| Cable length unshielded, max.                      | 150 m                                                  |
| <b>Interrupts/diagnostics/status information</b>   |                                                        |
| <b>Alarms</b>                                      |                                                        |
| Alarms                                             | Yes                                                    |
| Diagnostic alarm                                   | Yes                                                    |
| <b>Diagnostic messages</b>                         |                                                        |
| Diagnostic functions                               | Yes                                                    |
| <b>Diagnostics indication LED</b>                  |                                                        |
| for status of the inputs                           | Yes                                                    |
| For status of the outputs                          | Yes                                                    |
| for maintenance                                    | Yes                                                    |

|                                                              |                                                                              |
|--------------------------------------------------------------|------------------------------------------------------------------------------|
| Status indicator digital output (green)                      | Yes                                                                          |
| Status indicator digital input (green)                       | Yes                                                                          |
| Galvanic isolation                                           |                                                                              |
| Galvanic isolation digital inputs                            |                                                                              |
| between the channels, in groups of                           | 2                                                                            |
| Galvanic isolation digital outputs                           |                                                                              |
| between the channels                                         | Relay                                                                        |
| between the channels, in groups of                           | 4                                                                            |
| between the channels and the 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                               |                                                                              |
| IP20                                                         | Yes                                                                          |
| Standards, approvals, certificates                           |                                                                              |
| CE mark                                                      | Yes                                                                          |
| C-TICK                                                       | Yes                                                                          |
| FM approval                                                  | Yes                                                                          |
| Climatic and mechanical conditions for storage and transport |                                                                              |
| Climatic conditions for storage and transport                |                                                                              |
| Free fall                                                    |                                                                              |
| Drop height, max. (in packaging)                             | 0.3 m ; five times, in dispatch package                                      |
| Temperature                                                  |                                                                              |
| Permissible temperature range                                | -40 °C to +70 °C                                                             |
| Air pressure acc. to IEC 60068-2-13                          |                                                                              |
| Permissible air pressure                                     | 1080 to 660 hPa                                                              |
| Mechanical and climatic conditions during operation          |                                                                              |
| Climatic conditions in operation                             |                                                                              |
| Temperature                                                  |                                                                              |
| Permissible temperature range                                | 0 °C to 55 °C horizontal installation<br>0 °C to 45 °C vertical installation |
| Permissible temperature change                               | 5°C to 55°C, 3°C / minute                                                    |
| Connection method                                            |                                                                              |
| required front connector                                     | Yes                                                                          |
| Mechanics/material                                           |                                                                              |

|                         |              |
|-------------------------|--------------|
| Type of housing (front) |              |
| Plastic                 | Yes          |
| Dimensions              |              |
| Width                   | 70 mm        |
| Height                  | 100 mm       |
| Depth                   | 75 mm        |
| Weight                  |              |
| Weight, approx.         | 350 g        |
| Status                  | Jul 17, 2012 |