

## 6ES7223-1BL32-0XB0

Digital I/O SM 1223, 16DI/16DO

### Technical data



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	
Power supply to the transmitters	
<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	
— 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	
<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 24 V 5 V DC at 1 mA 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 2.5 mA 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	
<ul style="list-style-type: none"> <li>shielded, max.</li> <li>unshielded, max.</li> </ul>	500 m 300 m
Digital outputs	
Number of digital outputs	16
<ul style="list-style-type: none"> <li>in groups of</li> </ul>	1
Short-circuit protection	No; to be provided externally
Limitation of inductive shutdown voltage to	L+ (-48 V)
Switching capacity of the outputs	
<ul style="list-style-type: none"> <li>with resistive load, max.</li> <li>on lamp load, max.</li> </ul>	0.5 A 5 W
Output voltage	

<ul style="list-style-type: none"> <li>Rated value (DC)</li> <li>for signal "0", max.</li> <li>for signal "1", min.</li> </ul>	24 V 0.1 V; with 10 kOhm load 20 V DC
<b>Output current</b>	
<ul style="list-style-type: none"> <li>for signal "1" rated value</li> <li>for signal "1" permissible range, max.</li> <li>for signal "0" residual current, max.</li> </ul>	0.5 A 0.5 A 10 µA
<b>Output delay with resistive load</b>	
<ul style="list-style-type: none"> <li>"0" to "1", max.</li> <li>"1" to "0", max.</li> </ul>	50 µs 200 µs
<b>Total current of the outputs (per group)</b>	
horizontal installation	
— up to 50 °C, max.	8 A; Current per mass
<b>Relay outputs</b>	
Switching capacity of contacts	
— with inductive load, max.	0.5 A
— on lamp load, max.	5 W
— with resistive load, max.	0.5 A
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>shielded, max.</li> <li>unshielded, max.</li> </ul>	500 m 150 m
<b>Interrupts/diagnostics/status information</b>	
<b>Alarms</b>	
<ul style="list-style-type: none"> <li>Diagnostic alarm</li> </ul>	Yes
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>for status of the inputs</li> <li>for status of the outputs</li> </ul>	Yes Yes
<b>Potential separation</b>	
Potential separation digital inputs	
<ul style="list-style-type: none"> <li>between the channels, in groups of</li> </ul>	2
Potential separation digital outputs	
<ul style="list-style-type: none"> <li>between the channels, in groups of</li> <li>between the channels and backplane bus</li> </ul>	1 500 V AC
<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>	
<ul style="list-style-type: none"> <li>Fall height, max.</li> </ul>	0.3 m; five times, in product package
<b>Ambient temperature during operation</b>	
<ul style="list-style-type: none"> <li>min.</li> <li>max.</li> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> <li>vertical installation, max.</li> <li>permissible temperature change</li> </ul>	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 5°C to 55°C, 3°C / minute
<b>Ambient temperature during storage/transportation</b>	
<ul style="list-style-type: none"> <li>min.</li> <li>max.</li> </ul>	-40 °C 70 °C
<b>Air pressure acc. to IEC 60068-2-13</b>	
<ul style="list-style-type: none"> <li>Storage/transport, min.</li> <li>Storage/transport, max.</li> </ul>	660 hPa 1 080 hPa
<b>Relative humidity</b>	
<ul style="list-style-type: none"> <li>Operation at 25 °C without condensation, max.</li> </ul>	95 %
<b>Connection method</b>	
required front connector	Yes
<b>Mechanics/material</b>	
Enclosure material (front) <ul style="list-style-type: none"> <li>Plastic</li> </ul>	Yes
<b>Dimensions</b>	
Width	70 mm
Height	100 mm
Depth	75 mm
<b>Weights</b>	
Weight, approx.	310 g
<b>last modified:</b>	1/16/2021

