

Siemens  
EcoTech



SIMATIC S7-1200 G2: SB 1223 digital I/O, 4 DI/4 DO 100 kHz; inputs: 4 x DI 24 V DC sink/source, 100 kHz; outputs: 4 x DQ 24 V DC 0.1 A sinking/sourcing transistor, 100 kHz

General information	
Product type designation	SB 1223, DI 4x 24 V DC/DQ 4x 24 V DC 100 kHz
Engineering with	<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated from version V20 or higher</li> </ul>
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, typ.	48 mA
Digital inputs	<ul style="list-style-type: none"> <li>from load voltage L+ (without load), max. 6 mA; per channel</li> </ul>
Digital outputs	<ul style="list-style-type: none"> <li>from load voltage L+, max. 15 mA</li> </ul>
Power loss	
Power loss, typ.	1.7 W
Digital inputs	
Number of digital inputs	4; sink / source
<ul style="list-style-type: none"> <li>in groups of 4</li> </ul>	
Input characteristic curve in accordance with IEC 61131, type 1	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	4
Input voltage	
<ul style="list-style-type: none"> <li>Rated value (DC) 24 V</li> <li>for signal "0" 5 V DC or 0.5 mA</li> <li>for signal "1" 15 V DC at 2.5 mA</li> </ul>	
Input current	
<ul style="list-style-type: none"> <li>for signal "0", max. (permissible quiescent current) 0.5 mA</li> <li>for signal "1", min. 3.3 mA</li> <li>for signal "1", typ. 6 mA</li> </ul>	
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes; 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 ms
for interrupt inputs	

— parameterizable	Yes
for technological functions	
— parameterizable	Yes
<b>Cable length</b>	
• shielded, max.	500 m; 500 m shielded, 50 m shielded for HSC inputs
• unshielded, max.	300 m
<b>Digital outputs</b>	
Number of digital outputs	4
• in groups of	4
Short-circuit protection	Yes
<b>Switching capacity of the outputs</b>	
• with resistive load, max.	0.1 A
<b>Output voltage</b>	
• Rated value (DC)	24 V
• for signal "0", max.	1 V
• for signal "1", min.	L+ (-1.5 V)
<b>Output current</b>	
• for signal "1" rated value	0.1 A
<b>Output delay with resistive load</b>	
• "0" to "1", max.	1.8 µs
• "1" to "0", max.	1.8 µs
<b>Total current of the outputs (per group)</b>	
horizontal installation	
— up to 50 °C, max.	0.2 A
<b>Cable length</b>	
• shielded, max.	500 m; 500 m shielded, 50 m shielded for PTO outputs
• unshielded, max.	150 m
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes
<b>Alarms</b>	
• Diagnostic alarm	Yes
<b>Diagnoses</b>	
• Monitoring the supply voltage	Yes
<b>Diagnostics indication LED</b>	
• DIAG LED	Yes
• for status of the inputs	Yes
• for status of the outputs	Yes
<b>Potential separation</b>	
<b>Potential separation digital inputs</b>	
• between the channels	No
• between the channels, in groups of	4
• Number of potential groups	1
• between the channels and backplane bus	Yes; 707 V DC (type test)
<b>Potential separation digital outputs</b>	
• between the channels	No
• between the channels, in groups of	4
• Number of potential groups	1
• between the channels and backplane bus	Yes; 707 V DC (type test)
<b>Degree and class of protection</b>	
IP degree of protection	IP20
<b>Standards, approvals, certificates</b>	
Siemens Eco Profile (SEP)	Siemens EcoTech
CE mark	Yes
CSA approval	No
UL approval	Yes
cULus	Yes
FM approval	No
RCM (formerly C-TICK)	Yes
KC approval	Yes

Marine approval	No	
<b>Ecological footprint</b>		
• environmental product declaration	Yes; type 2 acc. to ISO 14021	
<b>Global warming potential</b>		
— global warming potential, (total) [CO2 eq]	9.53 kg	
— global warming potential, (during production) [CO2 eq]	3.86 kg	
— global warming potential, (during operation) [CO2 eq]	5.74 kg	
— global warming potential, (after end of life cycle) [CO2 eq]	-0.086 kg	
<b>Ambient conditions</b>		
<b>Free fall</b>		
• Fall height, max.	0.3 m; five times, in product package	
<b>Ambient temperature during operation</b>		
• min.	-20 °C	
• max.	40 °C; at max. voltages and max. specifications	
• horizontal installation, min.	-20 °C	
• horizontal installation, max.	60 °C; at rated voltages, 50 % of max. specification and alternate IO active	
• vertical installation, min.	-20 °C	
• vertical installation, max.	50 °C; at rated voltages, 50 % of max. specification and alternate IO active	
<b>Ambient temperature during storage/transportation</b>		
• min.	-40 °C	
• max.	70 °C	
<b>Air pressure acc. to IEC 60068-2-13</b>		
• Operation, min.	540 hPa	
• Operation, max.	1 140 hPa	
• Storage/transport, min.	540 hPa	
• Storage/transport, max.	1 140 hPa	
<b>Altitude during operation relating to sea level</b>		
• Installation altitude, min.	-1 000 m	
• Installation altitude, max.	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual	
<b>Relative humidity</b>		
• Operation at 25 °C without condensation, max.	95 %	
<b>Vibrations</b>		
• Vibration resistance during operation acc. to IEC 60068-2-6	3.5 mm from 5 - 8.4 Hz, 1g from 8.4 - 150 Hz	
• Operation, tested according to IEC 60068-2-6	Yes	
<b>Shock testing</b>		
• tested according to IEC 60068-2-27	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms	
<b>Pollutant concentrations</b>		
• SO2 at RH < 60% without condensation	SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60 % condensation-free	
<b>Mechanics/material</b>		
Enclosure material (front)		
• Plastic	Yes	
<b>Dimensions</b>		
Width	15 mm	
Height	62 mm	
Depth	63 mm	
<b>Weights</b>		
Weight, approx.	28 g	
<b>Classifications</b>		
	<b>Version</b>	<b>Classification</b>
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

**Approvals / Certificates**

**General Product Approval**



[Miscellaneous](#)



[China RoHS](#)



**EMV      For use in hazardous locations      Test Certificates**



[CCC-Ex](#)

[Type Test Certificates/Test Report](#)

**Maritime application      Environment**



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