

Siemens  
EcoTech



SIMATIC S7-1200 G2: SM 1223 digital I/O, 8 DI/8 RLY; inputs: 8x DI 24 V DC sink/source; outputs: 8x DO relay 2 A

Figure similar

General information	
Product type designation	SM 1223, DI 8x 24 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.	105 mA
Digital inputs	
<ul style="list-style-type: none"> <li>from load voltage L+ (without load), max.</li> </ul>	4.1 mA; per channel
Digital outputs	
<ul style="list-style-type: none"> <li>from load voltage L+, max.</li> </ul>	9 mA; per relay coil
Power loss	
Power loss, typ.	4.8 W
Digital inputs	
Number of digital inputs	8
<ul style="list-style-type: none"> <li>in groups of</li> </ul>	4
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	
<ul style="list-style-type: none"> <li>Rated value (DC)</li> <li>for signal "0"</li> <li>for signal "1"</li> </ul>	24 V 5 V DC or 0.5 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	No
Cable length	
• shielded, max.	500 m
• unshielded, max.	300 m
<b>Digital outputs</b>	
Number of digital outputs	8
• in groups of	8
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" rated value	2 A
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.	16 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
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes
Alarms	
• Diagnostic alarm	Yes
Diagnoses	
• Monitoring the supply voltage	Yes
Diagnostics indication LED	
• for status of the inputs	Yes
• for status of the outputs	Yes
• for maintenance	Yes
<b>Potential separation</b>	
Potential separation digital inputs	
• between the channels, in groups of	4
• between the channels and backplane bus	Yes; 707 V DC (type test)
Potential separation digital outputs	
• between the channels	Relays
• between the channels, in groups of	8
• between the channels and backplane bus	Yes; 4 200 V DC (type test)
<b>Isolation</b>	
Isolation tested with	1500 V AC (type test)
<b>Degree and class of protection</b>	
IP degree of protection	IP20

Standards, approvals, certificates	
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
Ecological footprint	
<ul style="list-style-type: none"> <li>environmental product declaration</li> </ul>	Yes; type 2 acc. to ISO 14021
Global warming potential	
— global warming potential, (total) [CO2 eq]	40.3 kg
— global warming potential, (during production) [CO2 eq]	7.79 kg
— global warming potential, (during operation) [CO2 eq]	32.5 kg
— global warming potential, (after end of life cycle) [CO2 eq]	-0.089 kg
Ambient conditions	
Free fall	
<ul style="list-style-type: none"> <li>Fall height, max.</li> </ul>	0.3 m; five times, in product package
Ambient temperature during operation	
<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; No condensation 40 °C; at max. voltages and max. specifications -20 °C; No condensation 60 °C; at rated voltages, 50 % of max. specification and alternate IO active -20 °C; No condensation 50 °C; at rated voltages, 50 % of max. specification and alternate IO active 5°C to 55°C, 3°C / minute
Ambient temperature during storage/transportation	
<ul style="list-style-type: none"> <li>min.</li> <li>max.</li> </ul>	-40 °C 70 °C
Air pressure acc. to IEC 60068-2-13	
<ul style="list-style-type: none"> <li>Operation, min.</li> <li>Operation, max.</li> <li>Storage/transport, min.</li> <li>Storage/transport, max.</li> </ul>	540 hPa 1 140 hPa 540 hPa 1 140 hPa
Altitude during operation relating to sea level	
<ul style="list-style-type: none"> <li>Installation altitude, min.</li> <li>Installation altitude, max.</li> </ul>	-1 000 m 4 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Relative humidity	
<ul style="list-style-type: none"> <li>Operation at 25 °C without condensation, max.</li> </ul>	95 %
Vibrations	
<ul style="list-style-type: none"> <li>Vibration resistance during operation acc. to IEC 60068-2-6</li> <li>Operation, tested according to IEC 60068-2-6</li> </ul>	3.5 mm from 5 - 8.4 Hz, 1g from 8.4 - 150 Hz Yes
Shock testing	
<ul style="list-style-type: none"> <li>tested according to IEC 60068-2-27</li> </ul>	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Pollutant concentrations	
<ul style="list-style-type: none"> <li>SO2 at RH &lt; 60% without condensation</li> </ul>	SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60 % condensation-free
Connection method	
required front connector	No
Mechanics/material	
Enclosure material (front) <ul style="list-style-type: none"> <li>plastic</li> </ul>	Yes
Dimensions	
Width	30 mm

Height	125 mm
Depth	100 mm
<b>Weights</b>	
Weight, approx.	194 g

<b>Classifications</b>			
		<b>Version</b>	<b>Classification</b>
	eClass	16	27-24-22-04
	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](#)



**General Product Approval      EMV      For use in hazardous locations**



[China RoHS](#)



**For use in hazardous locations      Test Certificates      Maritime application**

[Miscellaneous](#)

[CCC-Ex](#)

[CCC-Ex](#)

[Type Test Certificates/Test Report](#)



**Maritime application      Environment**



[NK / Nippon Kaiji Kyokai](#)



[KR \(Korean Register of Shipping\)](#)



**Environment**

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