



SIMATIC S7-1200, Digital I/O SM 1223, 8 DI AC/8 DO RLY, 8 DI 120/230 V AC, 8 DO relay 2 A

General information	
Product type designation	SM 1223, DI 8x120/230 V AC, 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.	120 mA
output voltage / header	
supply voltage of the transmitters / header	
<ul style="list-style-type: none"> <li>product function / supply voltage for transmitters</li> </ul>	Yes
Power loss	
Power loss, typ.	7.5 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>Type of input voltage</li> <li>Rated value (AC)</li> <li>for signal "0"</li> <li>for signal "1"</li> </ul>	AC 120/230 V AC 20 V AC at 1 mA 79 V AC 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 9 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

<b>Cable length</b>	
• shielded, max.	500 m
• unshielded, max.	300 m
<b>Digital outputs</b>	
Number of digital outputs	8
• in groups of	4
Short-circuit protection	No; to be provided externally
<b>Switching capacity of the outputs</b>	
• with resistive load, max.	2 A
• on lamp load, max.	30 W with DC, 200 W with AC
<b>Output voltage</b>	
• Rated value (DC)	5 V DC to 30 V DC
• Rated value (AC)	5 V AC to 250 V AC
<b>Output current</b>	
• for signal "1" rated value	2 A
• 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>Total current of the outputs (per group)</b>	
horizontal installation	
— up to 50 °C, max.	8 A; Current per mass
<b>Relay outputs</b>	
• 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
<b>Switching capacity of contacts</b>	
— with inductive load, max.	2 A
— on lamp load, max.	30 W with DC, 200 W with AC
— with resistive load, max.	2 A
<b>Cable length</b>	
• shielded, max.	500 m
• unshielded, max.	150 m
<b>Interrupts/diagnostics/status information</b>	
<b>Alarms</b>	
• Diagnostic alarm	Yes
<b>Diagnostics indication LED</b>	
• 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, in groups of	2
<b>Potential separation digital outputs</b>	
• between the channels	Relays
• between the channels, in groups of	2
• between the channels and backplane bus	1 500 V AC for 1 minute
<b>Permissible potential difference</b>	
between different circuits	750 V AC for 1 minute
<b>Degree and class of protection</b>	
IP degree of protection	IP20
<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>	
• Fall height, max.	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> </ul>	-20 °C 60 °C; Number of simultaneously activated outputs: 4 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 at 55 °C horizontal or 45 °C vertical
<ul style="list-style-type: none"> <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 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 / header</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	45 mm
Height	100 mm
Depth	75 mm
<b>Weights</b>	
Weight, approx.	230 g
<b>last modified:</b>	4/1/2022 