

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



### Supply voltage

Rated value (DC)	
<ul style="list-style-type: none"> <li>• 24 V DC</li> </ul>	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	
<ul style="list-style-type: none"> <li>• from load voltage L+ (without load), max.</li> </ul>	4 mA/input 11 mA/relay

### Output voltage

Power supply to the transmitters	
<ul style="list-style-type: none"> <li>• present</li> </ul>	Yes

### Power losses

Power loss, typ.	10 W
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### 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
<b>vertical installation</b>	
— up to 40 °C, max.	16
<b>Input voltage</b>	
• Type of input voltage	DC
• Rated value (DC)	24 V
• for signal "0"	5 V DC at 1 mA
• for signal "1"	15 VDC at 2.5 mA
<b>Input current</b>	
• for signal "0", max. (permissible quiescent current)	1 mA
• for signal "1", min.	2.5 mA
• for signal "1", typ.	4 mA; Typical
<b>Input delay (for rated value of input voltage)</b>	
<b>for standard inputs</b>	
— 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
<b>for interrupt inputs</b>	
— Parameterizable	Yes
<b>Cable length</b>	
• shielded, max.	500 m
• Unshielded, max.	300 m
<b>Digital outputs</b>	
Number of digital outputs	16
• 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 (AC)	5 V AC to 250 V AC
• Rated value (DC)	5 V DC to 30 V DC
<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 with DC, 200 W with AC
— with resistive load, max.	2 A
<b>Cable length</b>	
• shielded, max.	500 m
• Unshielded, max.	150 m

### Interrupts/diagnostics/status information

<b>Alarms</b>	
• Alarms	Yes
• Diagnostic alarm	Yes
<b>Diagnostic messages</b>	
• Diagnostic functions	Yes
• Monitoring the supply voltage	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

<b>Galvanic isolation digital inputs</b>	
• between the channels, in groups of	2
<b>Galvanic isolation digital outputs</b>	
• between the channels	Relays
• 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
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### Degree and class of protection

<b>Degree of protection to EN 60529</b>	
• IP20	Yes

### Standards, approvals, certificates

CE mark	Yes
CSA approval	Yes
UL approval	Yes
cULus	Yes

RCM (formerly C-TICK)	Yes
FM approval	Yes
<b>Marine approval</b>	
• Marine approval	Yes
<b>Ambient conditions</b>	
<b>Free fall</b>	
• Drop height, max. (in packaging)	0.3 m; five times, in dispatch package
<b>Ambient temperature in operation</b>	
• Permissible temperature range	-20 °C to +60 °C horizontal mounting, -20 °C to 50 °C vertical mounting, 95% humidity, non-condensing
• Min.	-20 °C
• max.	60 °C; Number of simultaneously activated outputs: 8 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 16 at 55 °C horizontal or 45 °C vertical
• Permissible temperature change	5°C to 55°C, 3°C / minute
<b>Storage/transport temperature</b>	
• Min.	-40 °C
• max.	70 °C
<b>Air pressure acc. to IEC 60068-2-13</b>	
• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa
<b>Relative humidity</b>	
• Permissible range (without condensation) at 25 °C	95 %
<b>Connection method</b>	
required front connector	Yes
<b>Mechanics/material</b>	
<b>Type of housing (front)</b>	
• plastic	Yes
<b>Dimensions</b>	
Width	70 mm
Height	100 mm
Depth	75 mm
<b>Weights</b>	
Weight, approx.	350 g
<b>last modified:</b>	12.03.2015