

SIMATIC S7-1200, DIGITAL I/O SM 1223, 16DI / 16DO, 16DI DC 24 V, SINK/SOURCE, 16DO, TRANSISTOR 0.5A



### Supply voltage

24 V DC	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.	185 mA
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### Digital inputs

<ul style="list-style-type: none"> <li>from load voltage L+ (without load), max.</li> </ul>	4 mA; per channel
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### Output voltage

#### Power supply to the transmitters

<ul style="list-style-type: none"> <li>present</li> </ul>	Yes
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### Power losses

Power loss, typ.	4.5 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

<b>Number of simultaneously controllable inputs</b>	
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
<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>	
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>	
• Cable length, shielded, max.	500 m
• Cable length unshielded, max.	300 m
<b>Digital outputs</b>	
Number of digital outputs	16
• In groups of	1
short-circuit protection	No; to be provided externally
Limitation of inductive shutdown voltage to	L+ (-48 V)
<b>Switching capacity of the outputs</b>	
• with resistive load, max.	0.5 A
• on lamp load, max.	5 W
<b>Output voltage</b>	
• Rated value (DC)	24 V
• for signal "0", max.	0.1 V; with 10 kOhm load
• for signal "1", min.	20 V DC
<b>Output current</b>	
• for signal "1" rated value	0.5 A
• for signal "1" permissible range, max.	0.5 A
• for signal "0" residual current, max.	10 µA
<b>Output delay with resistive load</b>	

• "0" to "1", max.	50 $\mu$ s
• "1" to "0", max.	200 $\mu$ s
<b>Aggregate current of 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>	
• Cable length, shielded, max.	500 m
• Cable length unshielded, max.	150 m
<b>Interrupts/diagnostics/status information</b>	
<b>Alarms</b>	
• Alarms	Yes
• Diagnostic alarm	Yes
<b>Diagnostic messages</b>	
• Diagnostic functions	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
<b>Galvanic isolation</b>	
<b>Galvanic isolation digital inputs</b>	
• between the channels, in groups of	2
<b>Galvanic isolation digital outputs</b>	
• between the channels, in groups of	1
• between the channels and the backplane bus	500 V AC
<b>Degree and class of protection</b>	
Degree of protection to EN 60529	
• IP20	Yes
<b>Standards, approvals, certificates</b>	
CE mark	Yes
RCM (formerly C-TICK)	Yes
FM approval	Yes
<b>Climatic and mechanical conditions for storage and transport</b>	
<b>Climatic conditions for storage and transport</b>	
Free fall	
— Drop height, max. (in packaging)	0.3 m; five times, in dispatch package

<b>Temperature</b>	
— Permissible temperature range	-40 °C to +70 °C
<b>Air pressure acc. to IEC 60068-2-13</b>	
— Permissible air pressure	1080 to 660 hPa
<b>Relative humidity</b>	
— Permissible range (without condensation) at 25 °C	95 %

### Mechanical and climatic conditions during operation

<b>Climatic conditions in operation</b>	
<b>Temperature</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
— Permissible temperature change	5°C to 55°C, 3°C / minute

<b>Connection method</b>	
required front connector	Yes

<b>Mechanics/material</b>	
Type of housing (front)	
• plastic	Yes

<b>Dimensions</b>	
Width	70 mm
Height	100 mm
Depth	75 mm

<b>Weights</b>	
Weight, approx.	310 g
<b>last modified:</b>	14.10.2014