

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"> • 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.	180 mA
Digital inputs	
<ul style="list-style-type: none"> • from load voltage L+ (without load), max. 	4 mA/input 11 mA/relay
Output voltage	
Power supply to the transmitters	
<ul style="list-style-type: none"> • present 	Yes
Power loss	
Power loss, typ.	10 W
Digital inputs	
Number of digital inputs	16
<ul style="list-style-type: none"> • in groups of 	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
vertical installation	
— up to 40 °C, max.	16
Input voltage	
• 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
Input current	
• for signal "0", max. (permissible quiescent current)	1 mA
• for signal "1", min.	2.5 mA
• for signal "1", typ.	4 mA; Typical
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
Cable length	
• shielded, max.	500 m
• unshielded, max.	300 m
Digital outputs	
Number of digital outputs	16
• in groups of	4
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" permissible range, max.	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.	8 A; Current per mass
Relay outputs	

• Number of relay outputs	16
• 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

Interrupts/diagnostics/status information

Alarms	
• Alarms	Yes
• Diagnostic alarm	Yes
Diagnostic messages	
• Diagnostic functions	Yes
• Monitoring the supply voltage	Yes
Diagnostics indication LED	
• 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

Potential separation

Potential separation digital inputs	
• between the channels, in groups of	2
Potential separation digital outputs	
• 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

Degree of protection acc. to EN 60529	
• IP20	Yes

Standards, approvals, certificates

CE mark	Yes
CSA approval	Yes
UL approval	Yes
cULus	Yes

FM approval	Yes
RCM (formerly C-TICK)	Yes
Marine approval	
• Marine approval	Yes

Ambient conditions

Free fall

• Drop height, max. (in packaging)	0.3 m; five times, in dispatch package
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Ambient temperature during operation

• 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

Ambient temperature during storage/transportation

• min.	-40 °C
• max.	70 °C

Air pressure acc. to IEC 60068-2-13

• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa

Relative humidity

• permissible range (without condensation) at 25 °C	95 %
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Connection method

required front connector	Yes
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Mechanics/material

Type of housing (front)	
• plastic	Yes

Dimensions

Width	70 mm
Height	100 mm
Depth	75 mm

Weights

Weight, approx.	350 g
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last modified: 03.06.2015