



Figure similar

SIMATIC S7-1200, Digital I/O SM 1223, 16 DI/16 DO, 16 DI 24 V DC, Sink/Source, 16 DO, relay 2 A

General information	
Product type designation	SM 1223, DI 16x24 V DC, DQ 16x 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.	180 mA
Digital inputs	
• from load voltage L+ (without load), max.	4 mA/input 11 mA/relay
Output voltage / header	
supply voltage of the transmitters / header	
• product function / supply voltage for transmitters	Yes
Power loss	
Power loss, typ.	10 W
Digital inputs	
Number of digital inputs	16
• 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 V DC 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
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" rated value	2 A	
• 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		
• Diagnostic alarm	Yes	
Diagnostics indication LED		
• for status of the inputs	Yes	
• for status of the outputs	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 backplane bus	1 500 V AC for 1 minute	
Permissible potential difference		
between different circuits	750 V AC for 1 minute	
Degree and class of protection		
IP degree of protection	IP20	
Standards, approvals, certificates		
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
Ambient conditions	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• 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
• horizontal installation, min.	-20 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	-20 °C
• vertical installation, max.	50 °C
• 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	
• Operation at 25 °C without condensation, max.	95 %
connection method / header	
required front connector	Yes
Mechanics/material	
Enclosure material (front)	
• Plastic	Yes
Dimensions	
Width	70 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	350 g

last modified: 4/1/2022 