

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

<b>Supply voltage</b>	
24 V DC	Yes
permissible range, upper limit (DC)	28.8 V
<b>Input current</b>	
from backplane bus 5 V DC, max.	180 mA
<b>Digital inputs</b>	
from load voltage L+ (without load), max.	4 mA/input 11 mA/relay
<b>Output voltage</b>	
<b>Power supply to the transmitters</b>	
present	Yes
<b>Power losses</b>	
Power loss, typ.	10 W
<b>Digital inputs</b>	
Number/binary inputs	16
In groups of	2
Input characteristic curve acc. to 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>	
Rated value, DC	24 V
for signal "0"	5 V DC at 1 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>	
<b>Parameterizable</b>	Yes ; 0.2, 0.4, 0.8, 1.6, 3.2, 6.4, and 12.8 ms, selectable in groups of four
<b>for interrupt inputs</b>	
<b>Parameterizable</b>	Yes
<b>Cable length</b>	
<b>Cable length, shielded, max.</b>	500 m
<b>Cable length unshielded, max.</b>	300 m
<b>Digital outputs</b>	
<b>Number/binary outputs</b>	16
<b>In groups of</b>	4
<b>Functionality/short-circuit strength</b>	No ; to be provided externally
<b>Switching capacity of the outputs</b>	
<b>with resistive load, max.</b>	2 A
<b>on lamp load, max.</b>	30 W with DC, 200 W with AC
<b>Output current</b>	
<b>for signal "1" permissible range, max.</b>	2 A
<b>Output delay with resistive load</b>	
<b>"0" to "1", max.</b>	10 ms
<b>"1" to "0", max.</b>	10 ms
<b>Aggregate current of outputs (per group)</b>	
<b>horizontal installation</b>	
<b>up to 50 °C, max.</b>	8 A ; Current per mass
<b>Relay outputs</b>	
<b>Number of relay outputs</b>	16
<b>Rated input voltage of relay coil L+ (DC)</b>	24 V
<b>Number of operating cycles, max.</b>	mechanically 10 million, at rated load voltage 100,000
<b>Switching capacity of contacts</b>	
<b>with inductive load, max.</b>	2 A
<b>on lamp load, max.</b>	30 W with DC, 200 W with AC
<b>Switching frequency/contacts/at ohmic load/maximum</b>	2 A
<b>Cable length</b>	
<b>Cable length, shielded, max.</b>	500 m
<b>Cable length unshielded, max.</b>	150 m
<b>Interrupts/diagnostics/status information</b>	
<b>Alarms</b>	
<b>Alarms</b>	Yes

<b>Diagnostic alarm</b>	Yes
<b>Diagnostic messages</b>	
<b>Diagnostic functions</b>	Yes
<b>Monitoring the supply voltage</b>	Yes
<b>Diagnostics indication LED</b>	
<b>for status of the inputs</b>	Yes
<b>For status of the outputs</b>	Yes
<b>for maintenance</b>	Yes
<b>Status indicator digital output (green)</b>	Yes
<b>Status indicator digital input (green)</b>	Yes
<b>Galvanic isolation</b>	
<b>Galvanic isolation digital inputs</b>	
<b>between the channels, in groups of</b>	2
<b>Galvanic isolation digital outputs</b>	
<b>between the channels</b>	Relay
<b>between the channels, in groups of</b>	4
<b>between the channels and the backplane bus</b>	1500 V AC for 1 minute
<b>Degree and class of protection</b>	
<b>IP20</b>	Yes
<b>Standards, approvals, certificates</b>	
<b>CE mark</b>	Yes
<b>CSA approval</b>	Yes
<b>UL</b>	Yes
<b>cULus</b>	Yes
<b>C-TICK</b>	Yes
<b>FM approval</b>	Yes
<b>Marine approval</b>	Yes
<b>Climatic and mechanical conditions for storage and transport</b>	
<b>Climatic conditions for storage and transport</b>	
<b>Free fall</b>	
<b>Drop height, max. (in packaging)</b>	0.3 m ; five times, in dispatch package
<b>Temperature</b>	
<b>Permissible temperature range</b>	-40 °C to +70 °C
<b>Air pressure acc. to IEC 60068-2-13</b>	
<b>Permissible air pressure</b>	1080 to 660 hPa
<b>Mechanical and climatic conditions during operation</b>	
<b>Climatic conditions in operation</b>	
<b>Temperature</b>	

<b>Permissible temperature range</b>	-20 °C to +60 °C horizontal mounting -20 °C to 50 °C vertical mounting 95% humidity, non-condensing
<b>Min.</b>	-20 °C
<b>max.</b>	60 °C
<b>Permissible temperature change</b>	5°C to 55°C, 3°C / minute
<b>Connection method</b>	
<b>required front connector</b>	Yes
<b>Mechanics/material</b>	
<b>Type of housing (front)</b>	
<b>Plastic</b>	Yes
<b>Dimensions</b>	
<b>Width</b>	70 mm
<b>Height</b>	100 mm
<b>Depth</b>	75 mm
<b>Weight</b>	
<b>Weight, approx.</b>	350 g
Status	Jul 1, 2013