



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

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.	180 mA
Digital inputs	
from load voltage L+ (without load), max.	4 mA/input 11 mA/relay
Output voltage	
Power supply to the transmitters	
present	Yes
Power losses	
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 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	
Cable length, shielded, max.	500 m
Cable length 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 (AC)	5 V AC to 250 V AC
Rated value (DC)	5 V DC to 30 V DC
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
Aggregate current of outputs (per group)	
horizontal installation	
up to 50 °C, max.	8 A ; Current per mass
Relay outputs	
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
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	
Cable length, shielded, max.	500 m
Cable length 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
Galvanic isolation	
Galvanic isolation digital inputs	
between the channels, in groups of	2
Galvanic isolation 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

Degree and class of protection	
IP20	Yes
Standards, approvals, certificates	
CE mark	Yes
CSA approval	Yes
UL	Yes
cULus	Yes
RCM (former C-TICK)	Yes
FM approval	Yes
Marine approval	
Marine approval	Yes
Climatic and mechanical conditions for storage and transport	
Climatic conditions for storage and transport	
Free fall	
Drop height, max. (in packaging)	0.3 m ; five times, in dispatch package
Temperature	
Permissible temperature range	-40 °C to +70 °C
Air pressure acc. to IEC 60068-2-13	
Permissible air pressure	1080 to 660 hPa
Relative humidity	
Permissible range (without condensation) at 25 °C	95 %
Mechanical and climatic conditions during operation	
Climatic conditions in operation	
Temperature	
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
Connection method	
required front connector	Yes
Mechanics/material	
Type of housing (front)	
Plastic	Yes
Dimensions	
Width	70 mm
Height	100 mm
Depth	75 mm

Weights

Weight, approx.	350 g
Status	Jun 19, 2014