



Figure similar

SIMATIC S7-1200, Digital I/O SM 1223, 8 DI/8 DO, 8 DI 24 V DC, Sink/Source, 8 DO, transistor 0.5 A

General information	
Product type designation	SM 1223, DI 8x24 V DC, DQ 8x24 V DC
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.	145 mA
Digital inputs	
• from load voltage L+ (without load), max.	4 mA; per channel
output voltage / header	
supply voltage of the transmitters / header	
• present	Yes
Power loss	
Power loss, typ.	2.5 W
Digital inputs	
Number of digital inputs	8
• 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.	8
horizontal installation	
— up to 40 °C, max.	8
— up to 50 °C, max.	8
vertical installation	
— up to 40 °C, max.	8
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	8
• in groups of	1
Short-circuit protection	No; to be provided externally
Limitation of inductive shutdown voltage to	L+ (-48 V)
Switching capacity of the outputs	
• with resistive load, max.	0.5 A
• on lamp load, max.	5 W
Output voltage	
• Rated value (DC)	24 V
• for signal "0", max.	0.1 V; with 10 kOhm load
• for signal "1", min.	20 V DC
Output current	
• 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
Output delay with resistive load	
• "0" to "1", max.	50 µs
• "1" to "0", max.	200 µs
Total current of the outputs (per group)	
horizontal installation	
— up to 50 °C, max.	4 A; Current per mass
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, in groups of	1
• between the channels and backplane bus	500 V AC
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
Ecological footprint	
• environmental product declaration	Yes
Global warming potential	
— global warming potential, (total) [CO2 eq]	123 kg
— global warming potential, (during production) [CO2 eq]	12.1 kg
— global warming potential, (during operation) [CO2	111 kg

eq]

— global warming potential, (after end of life cycle)
[CO₂ eq]

-0.434 kg

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
- 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

required front connector Yes

Mechanics/material

Enclosure material (front)

- Plastic Yes

Dimensions

Width	45 mm
Height	100 mm
Depth	75 mm

Weights

Weight, approx. 210 g

Classifications

	Version	Classification
eClass	14	27-24-22-04
eClass	12	27-24-22-04
eClass	9.1	27-24-22-04
eClass	9	27-24-22-04
eClass	8	27-24-22-04
eClass	7.1	27-24-22-04
eClass	6	27-24-22-04
ETIM	9	EC001419
ETIM	8	EC001419
ETIM	7	EC001419
IDEA	4	3566
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval


[Manufacturer Declaration](#)
[Miscellaneous](#)


EMV

For use in hazardous locations



[FM](#)



[CCC-Ex](#)

Maritime application



[NK / Nippon Kaiji Kyokai](#)



[CCS \(China Classification Society\)](#)

Maritime application

Environment



last modified:

4/6/2025