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Data sheet 6ES7223-1QH32-0XB0

	SIMATIC S7-1200, Digital I/O SM 1223, 8 DI AC/8 DO RLY, 8 DI 120/230 V AC, 8 DO relay 2 A
General information	
Product type designation	SM 1223, DI 8x120/230 V AC, DQ 8x 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.	120 mA
Output voltage	
Power supply to the transmitters	
● present	Yes
Power loss	
Power loss, typ.	7.5 W
Digital inputs	
Number of digital inputs	8
● in groups of	4
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	
● Rated value (AC)	120/230 V AC
● for signal "0"	20 V AC at 1 mA
● for signal "1"	79 V AC 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.	9 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	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

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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	8
● 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	2
● 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
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 eq]	111 kg
— global warming potential, (after end of life cycle) [CO2 eq]	-0.434 kg

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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: 4 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 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	
required front connector	Yes
Mechanics/material	
Enclosure material (front)	
● Plastic	Yes
Dimensions	
Width	45 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	230 g

Classifications

	Version	Classification
eClass	16	27-24-22-04
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	10	EC001419
ETIM	9	EC001419
ETIM	8	EC001419
ETIM	7	EC001419
IDEA	4	3566
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

Miscellaneous

General Product Approval	EMV	For use in hazardous locations	Maritime application

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China RoHS	Manufacturer Declaration	RCM	ATEX	FM	DNV

Maritime application				Environment
NK / Nippon Kaiji Kyokai	RMRS	CCS (China Classification Society)	KR (Korean Register of Shipping)	EPD

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