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Data sheet 6ES7223-5PL50-0XB0



SIMATIC S7-1200 G2, SM 1223 digital I/O, 16DI/16RLY, inputs: 16x DI 24 V DC, sourcing/sinking input, outputs: 16x DO relays 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	
Current consumption, typ.	175 mA
from backplane bus 5 V DC, max.	160 mA
Digital inputs	
● from load voltage L+ (without load), max.	4.1 mA; per channel
Digital outputs	
● from load voltage L+, max.	9 mA; per relay coil
Power loss	
Power loss, typ.	8.2 W
Digital inputs	
Number of digital inputs	16
● in groups of	4
Sourcing/sinking input	Yes
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	
● Rated value (DC)	24 V
● for signal "0"	5 V DC or 0.5 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

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	groups of four
for interrupt inputs	
— parameterizable	No
Cable length	
● shielded, max.	500 m
● unshielded, max.	300 m
Digital outputs	
Number of digital outputs	16
● in groups of	8
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
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.	16 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	
Diagnostics function	Yes
Alarms	
● Diagnostic alarm	Yes
Diagnoses	
● Monitoring the supply voltage	Yes
Diagnostics indication LED	
● DIAG LED	Yes
● for status of the inputs	Yes
● for status of the outputs	Yes
Potential separation	
Potential separation digital inputs	
● between the channels, in groups of	4
● between the channels and backplane bus	Yes; 707 V DC (type test)
Potential separation digital outputs	
● between the channels	Relays
● between the channels, in groups of	8
● between the channels and backplane bus	Yes; 4 200 V DC (type test)
Isolation	
Isolation tested with	1500 V AC (type test)
Degree and class of protection	
IP degree of protection	IP20
Standards, approvals, certificates	
CE mark	Yes

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CSA approval	No
UL approval	Yes
cULus	Yes
FM approval	No
RCM (formerly C-TICK)	Yes
KC approval	Yes
Marine approval	No
Ambient conditions	
Free fall	
● Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
● min.	-20 °C; No condensation
● max.	40 °C; at max. voltages and max. specifications
● horizontal installation, min.	-20 °C; No condensation
● horizontal installation, max.	60 °C; at rated voltages, 50 % of max. specification and alternate IO active
● vertical installation, min.	-20 °C; No condensation
● vertical installation, max.	50 °C; at rated voltages, 50 % of max. specification and alternate IO active
● 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	
● Operation, min.	540 hPa
● Operation, max.	1 140 hPa
● Storage/transport, min.	540 hPa
● Storage/transport, max.	1 140 hPa
Altitude during operation relating to sea level	
● Installation altitude, min.	-1 000 m
● Installation altitude, max.	4 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Relative humidity	
● Operation at 25 °C without condensation, max.	95 %
Vibrations	
● Vibration resistance during operation acc. to IEC 60068-2-6	3.5 mm from 5 - 8.4 Hz, 1g from 8.4 - 150 Hz
● Operation, tested according to IEC 60068-2-6	Yes
Shock testing	
● tested according to IEC 60068-2-27	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Pollutant concentrations	
● SO2 at RH < 60% without condensation	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60 % condensation-free
Connection method	
required front connector	No
Mechanics/material	
Enclosure material (front)	
● Plastic	Yes
Dimensions	
Width	50 mm
Height	125 mm
Depth	100 mm
Weights	
Weight, approx.	311 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

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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

Approvals / Certificates

General Product Approval

Miscellaneous



China RoHS







General Product Approval	EMV	For use in hazardous locations		Maritime application	Environment
Manufacturer Declaration			CCC-Ex		

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