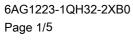
SIEMENS

Data sheet

6AG1223-1QH32-2XB0

SIPLUS S7-1200 SM 1223 -40...+70°C with conformal coating based on 6ES7223-1QH32-0XB0 . SIMATIC S7-1200, Digital inputs/ output 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	Yes		
61131, type 1			
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	AC		
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			



- (1 1		
 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		
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		
•			



Interrupts/diagnostics/status information	• unshielded, max.	150 m			
Alarms Yes Diagnostics function Yes Alarms Diagnostics indication LED for status of the injuts for status of the outputs for status of the output	Interrupts/diagnostics/status information				
Diagnostics alarm		Yes			
Diagnostics indication LED of or status of the inputs of or status of the outputs of or status of the outputs of or maintenance Potential separation Potential separation digital inputs obetween the channels, in groups of Obetween the channels, in groups of Obetween the channels obetween the channels in groups of Obetween the channels, in groups of Obetween the channels, in groups of Obetween the channels and backplane bus Obetween the channels and backplane bus Obetween the channels and backplane bus Obetween different circuits Obetween different minute Obetween different minute Obetween different minute O	Diagnostics function	Yes			
For status of the inputs Yes	Alarms				
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• for status of the outputs • for maintenance Potential separation Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • between the channels and backplane bus • between difference • between difference • between different circuits • between difference between different circuits • protection IP degree and class of protection IP degree and class of protection IP degree of protection IP and it is important to conditions Ambient conditions Ambient conditions Ambient conditions Ambient temperature during operation • min. • max. - 40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 70 °C; = Tmax; Tmax > +60 °C number of simultaneously activated outputs 4, inputs 4 (no adjacent points) for horizontal mounting position Ambient temperature during storage/transportation • min. • max. - 40 °C 70 °C Altitude during operation relating to sea level • Installation altitude above sea level, max. • Ambient air temperature-barometric pressurealtitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressurealtitude • Operation at 25 °C without condensation, max. • Operation at 25 °C without condensation, max. • With condensation, tested in accordance with • Operation of the condensation provided in accordance with • Operation of the condensation provided in accordance with • Operation of the condensation provided in accordance with • Operation of the condensation provided in accordance with • Operation of the condensation provided in accordance with	Diagnostics indication LED				
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Degree and class of protection IP degree of protection Ambient conditions Ambient temperature during operation • min. • max. 70 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 70 °C; = Tmax; Tmax > +60 °C number of simultaneously activated outputs 4, inputs 4 (no adjacent points) for horizontal mounting position Ambient temperature during storage/transportation • min. • max. 70 °C Altitude during operation relating to sea level • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude 1 mounting position 5 000 m 7 min Tmax at 1 080 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) Relative humidity • Operation at 25 °C without condensation, max. • With condensation, tested in accordance with					
IP degree of protection Ambient conditions Ambient temperature during operation • min. • max. • max. Ambient temperature during storage/transportation • min. • max. Ambient temperature during storage/transportation • min. • max. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. • Ambient air temperature-barometric pressurealtitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressurealtitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressurealtitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressurealtitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressurealtitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressurealtitude • Installation altitude above sea level, max. • Ambient air temperature during operation in relating to sea level • Installation altitude above sea level, max. • Timin Tmax at 1 080 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa 540 hPa (+3 500 m +5 000 m) Relative humidity • Operation at 25 °C without condensation, max. • With condensation, tested in accordance with	between different circuits	750 V AC for 1 minute			
Ambient conditions Ambient temperature during operation • min. • max. 70 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 70 °C; = Tmax; Tmax > +60 °C number of simultaneously activated outputs 4, inputs 4 (no adjacent points) for horizontal mounting position Ambient temperature during storage/transportation • min. • min. • max. 70 °C Altitude during operation relating to sea level • Installation altitude above sea level, max. • Ambient air temperature-barometric pressurealtitude altitude Tmin Tmax at 1 080 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa 540 hPa (+3 500 m +5 000 m) Relative humidity • Operation at 25 °C without condensation, max. • With condensation, tested in accordance with	Degree and class of protection				
Ambient temperature during operation • min. • max. -40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 70 °C; = Tmax; Tmax > +60 °C number of simultaneously activated outputs 4, inputs 4 (no adjacent points) for horizontal mounting position Ambient temperature during storage/transportation • min. • max. -40 °C 70 °C Altitude during operation relating to sea level • Installation altitude above sea level, max. • Ambient air temperature-barometric pressurealtitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressurealtitude **Tmin Tmax at 1 080 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) **Relative humidity** • Operation at 25 °C without condensation, max. • With condensation, tested in accordance with 100 %; RH incl. condensation/frost (no commissioning under)	IP degree of protection	IP20			
 min. -40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 70 °C; = Tmax; Tmax > +60 °C number of simultaneously activated outputs 4, inputs 4 (no adjacent points) for horizontal mounting position Ambient temperature during storage/transportation min. -40 °C max. 10 °C Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressurealtitude altitude min Tmax at 1 080 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) Relative humidity Operation at 25 °C without condensation, max. With condensation, tested in accordance with 100 %; RH incl. condensation/frost (no commissioning under 	Ambient conditions				
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Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressureal altitude Tmin Tmax at 1 080 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) Relative humidity Operation at 25 °C without condensation, max. With condensation, tested in accordance with 100 %; RH incl. condensation/frost (no commissioning under	• min.	-40 °C			
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 Ambient air temperature-barometric pressurealtitude Tmin Tmax at 1 080 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa 540 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) Relative humidity Operation at 25 °C without condensation, max. With condensation, tested in accordance with 100 %; RH incl. condensation/frost (no commissioning under 	Altitude during operation relating to sea level				
altitude Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) Relative humidity Operation at 25 °C without condensation, max. With condensation, tested in accordance with 95 % 100 %; RH incl. condensation/frost (no commissioning under	 Installation altitude above sea level, max. 	5 000 m			
 Operation at 25 °C without condensation, max. With condensation, tested in accordance with 95 % 100 %; RH incl. condensation/frost (no commissioning under 		Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m			
• With condensation, tested in accordance with 100 %; RH incl. condensation/frost (no commissioning under	Relative humidity				
	Operation at 25 °C without condensation, max.	95 %			
TEO 00000 Z 00, max.	 With condensation, tested in accordance with IEC 60068-2-38, max. 	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)			
Resistance	Resistance				



0 1 (111 : (
Coolants and lubricants		
 Resistant to commercially available coolants and lubricants 	Resistant to commercially available Yes; Incl. diesel and oil droplets in the air olants and lubricants	
Use in stationary industrial systems		
 to biologically active substances according to EN 60721-3-3 	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request	
 to chemically active substances according to EN 60721-3-3 	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	
 to mechanically active substances according to EN 60721-3-3 	Yes; Class 3S4 incl. sand, dust, *	
Use on ships/at sea		
 to biologically active substances according to EN 60721-3-6 	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request	
 to chemically active substances according to EN 60721-3-6 	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	
 to mechanically active substances according to EN 60721-3-6 	Yes; Class 6S3 incl. sand, dust; *	
Usage in industrial process technology		
 Against chemically active substances acc. to EN 60654-4 	Yes; Class 3 (excluding trichlorethylene)	
 Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)	
Remark		
 Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 	* The supplied plug covers must remain in place over the unused interfaces during operation!	
Conformal coating		
 Conformal coating Coatings for printed circuit board assemblies acc. to EN 61086 	Yes	
Coatings for printed circuit board assemblies	Yes Yes; Type 1 protection	
 Coatings for printed circuit board assemblies acc. to EN 61086 		
 Coatings for printed circuit board assemblies acc. to EN 61086 Protection against fouling acc. to EN 60664-3 Military testing according to MIL-I-46058C, 	Yes; Type 1 protection	
 Coatings for printed circuit board assemblies acc. to EN 61086 Protection against fouling acc. to EN 60664-3 Military testing according to MIL-I-46058C, Amendment 7 Qualification and Performance of Electrical Insulating Compound for Printed Board 	Yes; Type 1 protection Yes; Discoloration of coating possible during service life	
 Coatings for printed circuit board assemblies acc. to EN 61086 Protection against fouling acc. to EN 60664-3 Military testing according to MIL-I-46058C, Amendment 7 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A 	Yes; Type 1 protection Yes; Discoloration of coating possible during service life	
Coatings for printed circuit board assemblies acc. to EN 61086 Protection against fouling acc. to EN 60664-3 Military testing according to MIL-I-46058C, Amendment 7 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A Connection method required front connector Mechanics/material	Yes; Type 1 protection Yes; Discoloration of coating possible during service life Yes; Conformal coating, Class A	
 Coatings for printed circuit board assemblies acc. to EN 61086 Protection against fouling acc. to EN 60664-3 Military testing according to MIL-I-46058C, Amendment 7 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A Connection method required front connector Mechanics/material Enclosure material (front) 	Yes; Type 1 protection Yes; Discoloration of coating possible during service life Yes; Conformal coating, Class A Yes	
Coatings for printed circuit board assemblies acc. to EN 61086 Protection against fouling acc. to EN 60664-3 Military testing according to MIL-I-46058C, Amendment 7 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A Connection method required front connector Mechanics/material	Yes; Type 1 protection Yes; Discoloration of coating possible during service life Yes; Conformal coating, Class A	
 Coatings for printed circuit board assemblies acc. to EN 61086 Protection against fouling acc. to EN 60664-3 Military testing according to MIL-I-46058C, Amendment 7 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A Connection method required front connector Mechanics/material Enclosure material (front) 	Yes; Type 1 protection Yes; Discoloration of coating possible during service life Yes; Conformal coating, Class A Yes	



Height	100 mm	
Depth	75 mm	
Weights		
Weight, approx.	230 g	
last modified:	10/13/2020	

