SIEMENS

Data sheet

6AG2222-1BF32-1XB0



SIPLUS S7-1200 SM 1222 8DQ T1 rail based on 6ES7222-1BF32-0XB0 with conformal coating, -25...+70 °C, OT1 with ST1/2 (+70 °C für 10 minutes), digital output 8 DQ, 24 V DC, transistor 0.5 A

Figure similar

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General information	
Product type designation	SM 1222, DQ 8x24 V DC/0.5 A
based on	6ES7222-1BF32-0XB0
Supply voltage	
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
Power loss	
Power loss, typ.	1.5 W
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	typ. (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 "0" residual current, max.	10 μΑ
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
Relay outputs	
Switching capacity of contacts	
— with inductive load, max.	0.5 A
— on lamp load, max.	5 W
— with resistive load, max.	0.5 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	
for status of the outputs	Yes
• for maintenance	Yes
Potential separation	
Potential separation digital outputs	
between the channels, in groups of	1
between the channels and backplane bus	500 V AC
Isolation	
Isolation tested with	750 V DC (type test) and according to EN 50155 (routine test)
Degree and class of protection	
IP degree of protection	IP20
Standards, approvals, certificates	
Ecological footprint	
environmental product declaration	Yes
Global warming potential	
— global warming potential, (total) [CO2 eq]	68.6 kg
— global warming potential, (during production) [CO2	8.16 kg
eq]	
 global warming potential, (during operation) [CO2 	60.7 kg
eq] — global warming potential, (after end of life cycle) [CO2 eq]	-0.334 kg
Railway application	
• EN 50121-3-2	Yes; EMC for rail vehicles
• EN 50121-4	Yes; EMC for signal and telecommunications systems
• EN 50124-1	Yes; Railway applications - overvoltage category OV2; pollution degree PD2; rated surge voltage UNi = 0.5 kV; UNm = 24 V DC
• EN 50125-1	Yes; Rail vehicles - see ambient conditions
• EN 50125-2	Yes; Stationary electrical equipment - see ambient conditions
● EN 50125-3	Yes; Signal and telecommunications systems - see ambient conditions; vibrations and shocks: Application point outside of tracks (1 m to 3 m away from track)
• EN 50155	Yes; Rail vehicles - temperature class OT1, ST1/ST2, horizontal mounting position
• EN 61373	Yes; Rail vehicles - vibrations and shocks: Category 1 Class A/B
• Fire protection acc. to EN 45545-2	Yes; For proof of conformity, see Service & Support
Ambient conditions	
Free fall	
● Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-25 °C; = Tmin (incl. condensation/frost)
• max.	60 °C; = Tmax; +70 °C for 10 min (OT1, ST1/ST2 acc. to EN 50155)
• vertical installation, min.	-25 °C; = Tmin
vertical installation, max.	50 °C; = Tmax
Ambient temperature during storage/transportation	
• min.	-40 °C
● max.	70 °C
Altitude during operation relating to sea level	
 Installation altitude above sea level, max. 	2 000 m
Ambient air temperature-barometric pressure-altitude	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m)
Relative humidity	
With condensation, tested in accordance with IEC 60068- 2-38, max.	100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation
Resistance	
Coolants and lubricants	
 Resistant to commercially available coolants and lubricants 	Yes; Incl. diesel and oil droplets in the air

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## Collars 383 on request	i i	Yes: Class 3B2 mold, fungus and dry rot spores (with the exception of fauna):				
degree 3; * Yes, Class 384 ind. sand, dust. * to mechanically active substances according to EN 60721-3-3. to mechanically active substances according to EN 60721-3-3. to the mice of the substances according to EN 60721-3-3. to mechanically active substances according to EN 60721-3-3 diseas 583 in request Yes; Class 583 ind. sand, dust. * to mechanically active substances acc. to EN 60721-3-3 diseas 583 ind. sand, dust. * to mechanically active substances acc. to EN 60721-3-3 diseas 584 ind. sand, dust. * to mechanically active substances according to EN 60721-3-3 diseas 582 ind. sand, dust. * to mechanically active substances acc. to EN 60721-3-3 diseas 582 ind. sand, dust. * to mechanically active substances acc. to EN 60721-3-3 diseas 583 ind. sand, dust. * to mechanically active substances acc. to EN 60721-3-3 diseas 583 ind. sand, dust. * to mechanically active substances acc. to EN 60721-3-3 diseas 582 ind. sand, dust. * To mechanically active substances acc. to EN 60721-3-3 diseas 584 ind. sand, dust. * To mechanically according to Mill-140,656-4 and Ansalisation of environmental conditions acc. to EN 60721-2-1 EN 60654-4 and Ansalisation acc. to EN 60721-2-1 EN 60654-4 and Ansalisation according to Mill-140,666-3 and disease the sand according to Mill-140,666-3 and	60721-3-3	Class 3B3 on request				
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		. 55, 5,455 55 : 115.1 54.14, 445.	,			
Class 5B3 on request		V 01				
60721-3-5						
60721-3-5 Usage in industral process technology — Against chemically active substances acc. to EN 60654-4 — Environmental conditions for process, measuring and control systems acc. to ANS/ISA-71.04 Remark — Note regarding desolfication of environmental conditions acc. to EN 60721-3-3 class 3044 permissible); level LC3 (salt spray) and level LB3 (oil) *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plug covers must remain in place over the unused interfaces during operation. *The supplied plu						
		Yes; Class 5S3 incl. sand, dust; *				
G6654-4 —Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 Remark —Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 —Contains acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 —Coatings for printed circuit board assemblies acc. to EN 670856. Amendment? —Note regarding acc. to EN 60721, EN 60654-3 and ANSI/ISA-71.04 —Coatings for printed circuit board assemblies acc. to EN 670856. Amendment? —Note coating for printed circuit board assemblies acc. to EN 670856. Amendment? —Note coating for printed circuit board assemblies according to IMIL-140586. Amendment? —Coatings for printed Board Assemblies according to IPC-CC-830A —Connection and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A —Connection method —required front connector —Yes —Ves ——Ves ———————————————————————	Usage in industrial process technology					
and control systems acc. to ANSI/ISA-71.04 Remark Note regarding classification of environmental conditions acc. to EN 60721, EN 60854 and ANSI/ISA-71.04 Conformal coating **Chairings for printed circuit board assemblies acc. to EN 60721, EN 60854 and ANSI/ISA-71.04 Conformal coating **Craitings for printed circuit board assemblies acc. to EN 60165 **Protection against fouling acc. to EN 60664-3 **Electronic equipment on rolling stock acc. to EN 50155 **Millitary testing according to MIL-1-4058C, Amendment 7 **Coalification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A **Connection method** required front connector Wesharinsarbrial Enclosure material (front) **Plastic** **Plastic** **Dimensions** Width **45 mm Height 100 mm Depth **Weight, approx.* 180 g Other Note: for use in railway applications, also observe the product information "SIPLUS extreme RAIL" ASE37861980A, Online Support article 109736778 Classifications **Version** **Version** **Calass** 1 2 27-24-22-04 **eClass** 1 3 27-24-22-04 **eClass** 1 3 27-24-22-04 **eClass** 1 3 27-24-22-04 **eClass** 1 3 27-24-22-04 **eClass** 1 4 27-24-22-04 **eClass** 1 5 27-24-22-04 **eClass** 1 6 27-24-22-04 **eClass** 1 7 1 27-24-22-04 **eClass** 1 8 27-24-22-04 **eClass** 1 9 EC001419 ETIM 8 EC001419 ETIM 9 EC001419 ETIM 9 EC001419 ETIM 9 EC001419 ETIM 9 EC001419 ETIM 10EA 4 3566 UNSPSC** UNSPSC** UNSPSC** 1 5 21-17-05		Yes; Class 3 (excluding trichlorethylene)				
		concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level				
conditions acc. to EN 60721, EN 60654-4 and ANSIISA-71.04 Conformal coating Coatings for printed circuit board assemblies acc. to EN 6068-3 Floritection against fouling acc. to EN 6068-3 Floritection and Performance of Electrical Insulating Company for Printed Board Assemblies according to IPC-CC-830A Connection method required front connector Plessic Plessic Pressic Save Save Save Save Save Save Save Save	Remark					
Coatings for printed circuit board assemblies acc. to EN 61086 Protection against fouling acc. to EN 60684-3 Electronic equipment on rolling stock acc. to EN 50155 Military testing according to MIL-14058C, Amendment 7 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-3030 Connection method required front connector Pelsatio Plastic Plas	conditions acc. to EN 60721, EN 60654-4 and					
61086	Conformal coating					
• Electronic equipment on rolling stock acc. to EN 50155 • Military testing according to MIL-I46058C, Amendment 7 • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A connection method required front connector Ves		Yes; Class 2 for high reliability				
• Military testing according to MiL-1-46058C, Amendment 7 • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-C-830A required front connector required front connector **Recharics/material** Enclosure material (front) • Plastic • Plastic Poph **A5 mm Height 100 mm Depth 75 mm **Weights Weight, approx. Other Note: **Classifications **Version Classifications **Classifications **Version Classifications **Classifications **Version Classification **Classification **Class	 Protection against fouling acc. to EN 60664-3 	Yes; Type 1 protection				
● Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830 A **Connection method** **Tequired front connector** **Tequired	 Electronic equipment on rolling stock acc. to EN 50155 	Yes; Class PC2 protective coating acc. to EN 50155:2017				
Compound for Printed Board Assemblies according to IPC- CC-8-380A connection method required front connector Mechanics/material Enclosure material (front)	 Military testing according to MIL-I-46058C, Amendment 7 	Yes; Discoloration of coating possible during service life				
required front connector Mechanics/material Enclosure material (front) ● Plastic Yes Dimensions Width 45 mm Height 100 mm Depth 75 mm Weights Weight, approx. 180 g Other Note: for use in railway applications, also observe the product information "SIPLUS extreme RAIL" A5E37661960A, Online Support article 109736776 Classifications Version Classification	Compound for Printed Board Assemblies according to IPC-	Yes; Conformal coating, Class A				
## Desiric System and Erial (front) Plastic Pestic	connection method					
Enclosure material (front)	·	Yes				
● Plastic Yes Dimensions						
Dimensions Width 45 mm Height 100 mm Depth 75 mm Weight, approx. Under Tour Information "SIPLUS extreme RAIL" ASE37661960A, Online Support article 109736776 Classifications Version Classification eClass 14 27-24-22-04 eClass 12 27-24-22-04 eClass 9.1 27-24-22-04 eClass 9.1 27-24-22-04 eClass 9 27-24-22-04 eClass 7.1 27-24-22-04 eClass 7.1 27-24-22-04 eClass 6 27-24-22-0	, ,	V				
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Height		45 mm				
Depth 75 mm Weights Weight, approx. 180 g Other						
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Note: for use in railway applications, also observe the product information "SIPLUS extreme RAIL" A5E37661960A, Online Support article 109736776 Version Classification	Weight, approx.	180 g				
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Approvals / Certificates		ETIM IDEA	4	3566		

General Product Approval

EMV

Miscellaneous

Manufacturer Declaration







<u>KC</u>

EMV

Railway

Environment



Confirmation



last modified:

5/23/2025