SIEMENS

Data sheet

6AG1136-6DB00-2CA0



SIPLUS ET 200SP -25...+60°C with conformal coating based on 6ES7136-6DB00-0CA0 . Electronic module, 4 F-DQ PROFIsafe, 24 V DC/2 A, 15 mm width, up to PL E (ISO 13849), up to SIL 3 (IEC 61508)

General information	
Product type designation	F-DQ 4x24VDC HF
Firmware version	
• FW update possible	Yes
usable BaseUnits	BU type A0
Color code for module-specific color identification plate	CC02
Product function	
● I&M data	Yes; I&M0 to I&M3
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Input current	
Current consumption (rated value)	75 mA; without load
Current consumption, max.	21 mA; From the backplane bus
Output voltage	

Rated value (DC)	24 V
Power	
Power available from the backplane bus	70 mW
Power loss	
Power loss, typ.	4 W
Address area	
Address space per module	
• Inputs	5 byte
Outputs	5 byte
Digital outputs	
Number of digital outputs	4
Digital outputs, parameterizable	Yes
Short-circuit protection	Yes
 Response threshold, typ. 	> 3.3 A
Open-circuit detection	Yes
 Response threshold, typ. 	8 mA
Overload protection	Yes
 Response threshold, typ. 	2.9 A
Limitation of inductive shutdown voltage to	typ. 2*47V
Switching capacity of the outputs	
 with resistive load, max. 	2 A
 on lamp load, max. 	10 W
Load resistance range	
lower limit	12 Ω
• upper limit	2 000 Ω
Output voltage	
● for signal "1", min.	24 V; L+ (-0.5 V)
Output current	
 for signal "1" rated value 	2 A
 for signal "0" residual current, max. 	0.5 mA
Switching frequency	
 with resistive load, max. 	30 Hz; Symmetrical
 with inductive load, max. 	0.1 Hz; according to IEC 60947-5-1, DC-13, symmetrical
• on lamp load, max.	10 Hz; Symmetrical
Total current of the outputs	
 Current per channel, max. 	2 A; Note derating data in the manual
• Current per module, max.	6 A; Note derating data in the manual
Cable length	
● shielded, max.	1 000 m
• unshielded, max.	500 m

Interrupts/diagnostics/status information	
Substitute values connectable	No
Alarms	
• Diagnostic alarm	Yes
Diagnostics indication LED	
• RUN LED	Yes; green LED
• ERROR LED	Yes; red LED
 Monitoring of the supply voltage (PWR-LED) 	Yes; green PWR LED
 Channel status display 	Yes; green LED
 for channel diagnostics 	Yes; red LED
• for module diagnostics	Yes; green/red DIAG LED
Deterrited concertion	
Potential separation Potential separation channels	
between the channels	No
	Yes
between the channels and backplane bus	
 between the channels and the power supply of the electronics 	No
Isolation	
Isolation tested with	707 V DC (type test)
Standards, approvals, certificates	
Suitable for safety functions	Yes
Highest safety class achievable in safety mode	
 Performance level according to ISO 13849-1 	PLe
• SIL acc. to IEC 61508	SIL 3
Probability of failure (for service life of 20 years and	repair time of 100 hours)
 Low demand mode: PFDavg in accordance with SIL3 	< 2.00E-05 1/h
 High demand/continuous mode: PFH in accordance with SIL3 	< 1.00E-09 1/h
Ambient conditions	
Ambient temperature during operation	
 horizontal installation, min. 	-25 °C; = Tmin (incl. condensation/frost)
 horizontal installation, max. 	60 °C; = Tmax; +70 °C with configured empty slots to the left and right of the module
 vertical installation, min. 	-25 °C; = Tmin
 vertical installation, max. 	50 °C
Altitude during operation relating to sea level	
 Installation altitude above sea level, max. 	4 000 m
 Ambient air temperature-barometric pressure- altitude 	Restrictions for installation altitudes > 2 000 m, see entry ID: 109771992
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

to EN 60721-3-3 52 (severity degree 3): * to mechanically active substances according to EN 60721-3-3 Yes; Class 3S4 incl. sand, dust, * Against mechanical environmental conditions acc. to EN 60721-3-3 Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauntion to EN 60721-3-6 to biologically active substances according to EN 60721-3-6 Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauntion to EN 60721-3-6 to chemically active substances according to EN 60721-3-6 Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2 to mechanical environmental conditions acc. to EN 60721-3-6 Yes; Class 6M4 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0) Usage in industrial process technology Against mechanical environmental conditions for process, measuring and control systems acc. to EN 60721-3-6 Environmental conditions for process, measuring and control systems acc. to EN 60721-3-10 Yes; Class 3 (excluding trichlorethylene) Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 Yes; Class 2 for high availability Note regarding classification of environmental conditions acc. to EN 60721, EN 60664-3 Yes; Class 2 for high availability Note regarding classification of environmental conditions acc. to EN 60721, EN 60664-4 Yes; Class 2 for high availability Note regarding touling acc. to EN 60664-3 Yes; Type 1 protection	Resistance	
coolants and lubricants Ves: Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request - to biologically active substances according to EN 60721-3.3 Yes: Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-3 52 (severity degree 3); *	Coolants and lubricants	
 - to biologically active substances according to EN 60721-3-3 - to chemically active substances according to EN 60721-3-3 - to mechanically active substances according to EN 60721-3-3 - Against mechanical environmental conditions acc. to EN 60021-3-3 (6AG1193-6AA00-0AA0) Use on ships/at sea - to biologically active substances according to EN 60721-3-3 - Against mechanical environmental conditions acc. to EN 60721-3-6 - to biologically active substances according to EN 60721-3-6 - to the chanically active substances according to EN 60721-3-6 - to the chanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - Against mechanical environmental conditions acc. to EN 60721-3-6 - Against mechanical environmental conditions for process, measuring and control systems acc. to EN 60721-3-6 - Against chemically active substances acc. to ANSI/SA-71.04 Remark - Note regarding classification of environmental conditions acc. to EN 60721. EN 60654-4 and ANSI/SA-71.04 Remark - Note regarding classification of environmental conditions acc. to EN 60721. EN 60654-4 and ANSI/SA-71.04 Coatings for printed circuit board assemblies acc. to EN 61086 Protection against fouling acc. to EN 60664-3 Miltary testing according to MIL-1-4058C, Amendment 7 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IP-C-C-830A 	-	Yes; Incl. diesel and oil droplets in the air
to EN 60721-3-3 exception of fauna); Class 3B3 on request	Use in stationary industrial systems	
to EN 60721-3-3 52 (severity degree 3): * to mechanically active substances according to EN 60721-3-3 Yes; Class 3S4 incl. sand, dust, * Against mechanical environmental conditions acc. to EN 60721-3-3 Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauntion to EN 60721-3-6 to biologically active substances according to EN 60721-3-6 Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauntion to EN 60721-3-6 to chemically active substances according to EN 60721-3-6 Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2		
according to EN 60721-3-3 - Against mechanical environmental conditions acc. to EN 60721-3-3 Yes; Class 3M8 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0) Use on ships/at sea - to biologically active substances according to EN 60721-3-6 Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauntion for the formal conditions acc. to EN 60721-3-6 - to be chemically active substances according to EN 60721-3-6 Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-3		Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); *
conditions acc. to EN 60721-3-3(6AG1193-6AA00-0AA0)Use on ships/at sea- to biologically active substances according to EN 60721-3-6Yes; Class 6B2 mold, fungal and dry rot spores (excluding faun to EN 60721-3-6- to chemically active substances according to EN 60721-3-6Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2 	-	Yes; Class 3S4 incl. sand, dust, *
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to EN 60721-3-6 Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2	Use on ships/at sea	
to EN 60721-3-6 52 (severity degree 3); * — to mechanically active substances according to EN 60721-3-6 Yes; Class 6S3 incl. sand, dust; * — Against mechanical environmental conditions acc. to EN 60721-3-6 Yes; Class 6M4 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0) 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 EN 60654-4 Yes; Level GX group A/B (excluding trichlorethylene; harmful gr 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 unuse interfaces during operation! Conformal coating • Coatings for printed circuit board assemblies acc. to EN 61086 Yes; Class 2 for high availability • Protection against fouling acc. to EN 60664-3 Yes; Type 1 protection Yes; Discoloration of coating possible during service life • Military testing according to MIL-I-46058C, Amendment 7 Yes; Conformal coating, Class A Yes; Conformal coating, Class A		Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauna)
according to EN 60721-3-6 Against mechanical environmental conditions acc. to EN 60721-3-6 Yes; Class 6M4 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0) 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 gr. 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 unuse interfaces during operation! Conformal coating Yes; Class 2 for high availability acc. to EN 60664-3 Yes; Type 1 protection • Protection against fouling acc. to EN 60664-3 Yes; Discoloration of coating possible during service life Amendment 7 • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A Yes; Conformal coating, Class A		Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); *
conditions acc. to EN 60721-3-6(6AG1193-6AA00-0AA0)Usage in industrial process technology Against chemically active substances acc. to EN 60654-4Yes; Class 3 (excluding trichlorethylene) Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04Yes; Level GX group A/B (excluding trichlorethylene; harmful gr 	-	Yes; Class 6S3 incl. sand, dust; *
 Against chemically active substances acc. to EN 60654-4 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 * The supplied plug covers must remain in place over the unuse interfaces during operation! * 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; Class A 	-	
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measuring and control systems acc. to ANSI/ISA-71.04concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)Remark		Yes; Class 3 (excluding trichlorethylene)
 Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 Conformal coating 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 * The supplied plug covers must remain in place over the unuse interfaces during operation! * The supplied plug covers must remain in place over the unuse interfaces during operation! * The supplied plug covers must remain in place over the unuse interfaces during operation! * Yes; Class 2 for high availability * Yes; Type 1 protection Yes; Discoloration of coating possible during service life Yes; Conformal coating, Class A 	measuring and control systems acc. to	
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Amendment 7 • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A Insulation and Performance of Electrical Insulating Compound for Printed Board Insulating Compound for Printed Board Insulating Compound for Printed Board Insulating Compound for IPC-CC-830A	 Protection against fouling acc. to EN 60664-3 	Yes; Type 1 protection
Insulating Compound for Printed Board Assemblies according to IPC-CC-830A		Yes; Discoloration of coating possible during service life
	Insulating Compound for Printed Board	Yes; Conformal coating, Class A
	limensions	

Width	15 mm	
Height	73 mm	
Depth	58 mm	
Weights		
Weight, approx.	57 g	
last modified:	03/14/2020	