## SIEMENS

## Data sheet

## 6AG2132-6BF00-4CA0

SIPLUS ET 200SP DQ 8x24VDC/ 0.5A TX rail based on 6ES7132-6BF00-0CA0 with conformal coating, -40...+70 °C, OT4 with ST1/2 (+85 °C for 10 minutes), digital output module, suitable for BU type A0, color code CC02, channel diagnostics,

	diagnostics,
General information	
Product type designation	DQ 8x24 VDC/0.5 A ST
Firmware version	
FW update possible	Yes
based on	<u>6ES7132-6BF00-0CA0</u>
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
Isochronous mode	Yes
Engineering with	
<ul> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	see entry ID: 109746275
Operating mode	
• DQ	Yes
<ul> <li>DQ with energy-saving function</li> </ul>	No
• PWM	No
Oversampling	No
• MSO	Yes
Redundancy	
Redundancy capability	Yes
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
output voltage / header	
Rated value (DC)	24 \/
Power loss	
Power loss typ	1 W/
Address area	
Address space per module may	8 buto: 2 abannala nor automodula + Ol information
Address space per module, max.	o byte, z channels per submodule + Qrimormation
	Source output (PNP, current-sourcing)
Number of digital outputs	8; > +60 °C max. total current 1.0 A
Current-sinking	No
Current-sourcing	Yes
Digital outputs, parameterizable	Yes
Short-circuit protection	Yes
<ul> <li>Response threshold, typ.</li> </ul>	0.7 to 1.3 A
Limitation of inductive shutdown voltage to	Typ. L+ (-50 V)
Controlling a digital input	Yes
Switching capacity of the outputs	
<ul> <li>with resistive load, max.</li> </ul>	0.5 A
<ul> <li>on lamp load, max.</li> </ul>	5 W
Load resistance range	
lower limit	48 Ω
upper limit	12 kΩ
Output current	

<ul> <li>for signal "1" rated value</li> </ul>	0.5 A
<ul> <li>for signal "0" residual current, max.</li> </ul>	0.1 mA
Output delay with resistive load	
• "0" to "1", typ.	50 µs
• "1" to "0", typ.	100 µs
Parallel switching of two outputs	
• for uprating	No
for redundant control of a load	Yes
Switching frequency	
with resistive load, max.	100 Hz
• with inductive load, max.	2 Hz
• on lamp load, max.	10 Hz
Total current of the outputs	
Current per channel, max.	0.5 A
Current per module, max.	4 A
Total current of the outputs (per module)	
horizontal installation	
— up to 60 °C, max.	4 A
— up to 70 °C, max.	1 A
vertical installation	
— up to 50 °C, max.	4 A; in all other mounting positions
Cable length	
<ul> <li>shielded, max.</li> </ul>	1 000 m
• unshielded, max.	600 m
Isochronous mode	
Execution and activation time (TCO), min.	48 µs
Bus cycle time (TDP), min.	500 µs
Interrupts/diagnostics/status information	·
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
Diagnostic alarm	Yes
Diagnoses	
<ul> <li>Monitoring the supply voltage</li> </ul>	Yes
• Wire-break	Yes; channel by channel
Short-circuit	Yes; channel by channel
Group error	Yes
Diagnostics indication LED	
<ul> <li>Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; green PWR LED
Channel status display	Yes; green LED
for channel diagnostics	Yes; red LED
for module diagnostics	Yes; green/red DIAG LED
Potential separation	
Potential separation channels	
between the channels	No
<ul> <li>between the channels and backplane bus</li> </ul>	Yes
Isolation	
Isolation tested with	750 V DC (type test) and according to EN 50155 (routine test)
Standards, approvals, certificates	
Suitable for safety functions	No
Ecological footprint	
<ul> <li>environmental product declaration</li> </ul>	Yes
Global warming potential	
Global warning potential	
— global warming potential, (total) [CO2 eq]	20.4 kg
<ul> <li>— global warming potential, (total) [CO2 eq]</li> <li>— global warming potential, (during production) [CO2</li> </ul>	20.4 kg 3.16 kg
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<ul> <li>global warming potential</li> <li>global warming potential, (total) [CO2 eq]</li> <li>global warming potential, (during production) [CO2 eq]</li> <li>global warming potential, (during operation) [CO2 eq]</li> </ul>	20.4 kg 3.16 kg 17.5 kg
global warming potential    global warming potential, (total) [CO2 eq]    global warming potential, (during production) [CO2     eq]    global warming potential, (during operation) [CO2     eq]    global warming potential, (after end of life cycle)	20.4 kg 3.16 kg 17.5 kg
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• EN 50121-3-2	Yes; EMC for rail vehicles
• EN 50121-4	Yes; EMC for signal and telecommunications systems
• EN 50121-5	Yes; EMC for fixed installations and railway power supply equipment (shielded cables required)
• 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 OT4, 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	
Ambient temperature during operation	
<ul> <li>horizontal installation, min.</li> </ul>	-40 °C; = Tmin (incl. condensation/frost)
<ul> <li>horizontal installation, max.</li> </ul>	70 °C; = Tmax; +85 °C for 10 min (OT4, ST1/ST2 acc. to EN 50155)
<ul> <li>vertical installation, min.</li> </ul>	-40 °C; = Tmin
<ul> <li>vertical installation, max.</li> </ul>	50 °C; = Tmax
Altitude during operation relating to sea level	
<ul> <li>Installation altitude above sea level, max.</li> </ul>	2 000 m
<ul> <li>Ambient air temperature-barometric pressure-altitude</li> </ul>	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 under condensation conditions)
Resistance	
Coolants and lubricants	
<ul> <li>— Resistant to commercially available coolants and lubricants</li> </ul>	Yes; Incl. diesel and oil droplets in the air
Use in stationary industrial systems	
<ul> <li>— to biologically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
<ul> <li>— to chemically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
<ul> <li>— to mechanically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3S4 incl. sand, dust, *
<ul> <li>— Against mechanical environmental conditions acc. to EN 60721-3-3</li> </ul>	Yes; Class 3M8 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00- 0AA0)
Use on land craft, rail vehicles and special-purpose vehicles	
<ul> <li>— to biologically active substances according to EN 60721-3-5</li> </ul>	Yes; Class 5B2 mold, fungus and dry rot spores (with the exception of fauna); Class 5B3 on request
<ul> <li>— to chemically active substances according to EN 60721-3-5</li> </ul>	Yes; Class 5C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
<ul> <li>— to mechanically active substances according to EN 60721-3-5</li> </ul>	Yes; Class 5S3 incl. sand, dust; *
<ul> <li>— Against mechanical environmental conditions acc. to EN 60721-3-5</li> </ul>	Yes; Class 5M2 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00- 0AA0)
<ul> <li>— against mechanical environmental conditions in agriculture acc. to ISO 15003</li> </ul>	Yes; level 1 (Location LE) using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0)
Usage in industrial process technology	
<ul> <li>Against chemically active substances acc. to EN 60654-4</li> </ul>	Yes; Class 3 (excluding trichlorethylene)
<ul> <li>— Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04</li> </ul>	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	
<ul> <li>— Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04</li> </ul>	* The supplied plug covers must remain in place over the unused interfaces during operation!
Conformal coating	
Coatings for printed circuit board assemblies acc. to EN 61086	Yes; Class 2 for high reliability
<ul> <li>Protection against fouling acc. to EN 60664-3</li> </ul>	Yes; Type 1 protection
<ul> <li>Electronic equipment on rolling stock acc. to EN 50155</li> </ul>	Yes; Class PC2 protective coating acc. to EN 50155:2017
Military testing according to MIL-I-46058C, Amendment 7	Yes; Discoloration of coating possible during service life

 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A

Yes; Conformal coating, Class A

CC-630A				
Dimensions				
Width	15 mm			
Height	73 mm			
Depth	58 mm			
Weights				
Weight, approx.	30 g			
Other				
Note:	for use in railway applications, also observe the product information "SIPLUS extreme RAIL" A5E37661960A, Online Support article 109736776			
Classifications				
		Version	Classification	
	o Class	14	27 24 26 04	

			eClass	9.1	27-24-26-04
			eClass	9	27-24-26-04
			eClass	8	27-24-26-04
			eClass	7.1	27-24-26-04
			eClass	6	27-24-26-04
			ETIM	9	EC001599
			ETIM	8	EC001599
			ETIM	7	EC001599
			IDEA	4	3566
			UNSPSC	15	32-15-17-05
Approvals / Certificate					
Approvais/ Certificate	25				
General Product Ap	proval				EMV
General Product Ap	proval <u>Manufacturer Declara-</u> <u>tion</u>	UK CA	C E EG-Konf.	UL UL	EMV RCM
General Product Ap <u>Miscellaneous</u> Railway	Manufacturer Declara- tion	UK CA	C E EG-Konf.	UL	

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