



Figure similar

SIPLUS S7-1500 DQ 8x24VDC/2A based on 6ES7522-1BF00-0AB0 with conformal coating, -40...+70 °C, digital output module, 8 channels in groups of 8; 8 A per group; diagnostics; substitute value

General information	
Product type designation	DQ 8x24VDC/2A HF
Firmware version	
• FW update possible	Yes
based on	6ES7522-1BF00-0AB0
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	No
• Prioritized startup	Yes
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	see entry ID: 109746275
Operating mode	
• DQ	Yes
• DQ with energy-saving function	Yes; with an application
• PWM	Yes
• Cam control (switching at comparison values)	No
• Oversampling	No
• MSO	Yes
• Integrated operating cycle counter	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; through internal protection with 10 A per group
Input current	
Current consumption, max.	40 mA; 20 mA per group, no output is activated.
Output voltage	
Rated value (DC)	24 V
Power	
Power consumption from the backplane bus	0.9 W
Power loss	
Power loss, typ.	5.6 W; 6.8 W for PWM operation
Digital outputs	
Type of digital output	Transistor
Number of digital outputs	8; > +60 °C Number of simultaneously controllable outputs max. 8x 0.5 A, max. total current per group 2 A
Current-sourcing	Yes
Digital outputs, parameterizable	Yes

output type acc. to IEC 61131, type 2	Yes
Short-circuit protection	Yes
• Response threshold, typ.	3 A
Limitation of inductive shutdown voltage to	-17 V
Controlling a digital input	Yes
Digital output functions, parameterizable	
• Freely usable digital output	Yes
• PWM output	Yes; FS02 and FW V2.1.0 or higher
— Number, max.	2
— Cycle duration, parameterizable	Yes; 2 ... 100 ms continuous
— ON period, min.	0 %
— ON period, max.	100 %
— Resolution of the duty cycle	0.1 %
— Minimum pulse duration	300 µs
Switching capacity of the outputs	
• on lamp load, max.	10 W
Load resistance range	
• lower limit	12 Ω
• upper limit	4 kΩ
Output voltage	
• for signal "1", min.	L+ (-0.8 V)
Output current	
• for signal "1" rated value	2 A
• for signal "1" permissible range, max.	2.4 A; note derating specification for PWM operation
• for signal "0" residual current, max.	0.5 mA
Output delay with resistive load	
• "0" to "1", typ.	80 µs
• "0" to "1", max.	100 µs
• "1" to "0", typ.	300 µs
• "1" to "0", max.	500 µs
Parallel switching of two outputs	
• for logic links	Yes
• for uprating	No
• for redundant control of a load	Yes
Switching frequency	
• with resistive load, max.	100 Hz; With PWM operation: 500 Hz
• with inductive load, max.	0.5 Hz; According to IEC 60947-5-1, DC-13; max. 500 Hz with PWM operation only with external circuit; see additional description in the manual
• on lamp load, max.	10 Hz
Total current of the outputs	
• Current per channel, max.	2 A; see additional description in the manual
• Current per group, max.	8 A; see additional description in the manual
• Current per module, max.	16 A; see additional description in the manual
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
• Diagnostic alarm	Yes
• Maintenance interrupt	Yes
Diagnoses	
• Monitoring the supply voltage	Yes
• Wire-break	No
• Short-circuit	Yes
• Group error	Yes
Diagnostics indication LED	
• RUN LED	Yes; green LED

• ERROR LED	Yes; red LED
• MAINT LED	Yes; Yellow LED
• Monitoring of the supply voltage (PWR-LED)	Yes; green LED
• Channel status display	Yes; green LED
• for channel diagnostics	Yes; red LED
• for module diagnostics	Yes; red LED
Potential separation	
Potential separation channels	
• between the channels	No
• between the channels, in groups of	4
• between the channels and backplane bus	Yes
Isolation	
Isolation tested with	707 V DC (type test)
Standards, approvals, certificates	
Suitable for safety functions	No
Suitable for safety-related tripping of standard modules	Yes; From FS03
Ecological footprint	
• environmental product declaration	Yes
Global warming potential	
— global warming potential, (total) [CO ₂ eq]	43.8 kg
— global warming potential, (during production) [CO ₂ eq]	9.5 kg
— global warming potential, (during operation) [CO ₂ eq]	34.5 kg
— global warming potential, (after end of life cycle) [CO ₂ eq]	-0.231 kg
Highest safety class achievable for safety-related tripping of standard modules	
• Performance level according to ISO 13849-1	PL d
• Category according to ISO 13849-1	Cat. 3
• SIL acc. to IEC 62061	SIL 2
• remark on safety-oriented shutdown	https://support.industry.siemens.com/cs/de/en/view/39198632
Security	
signed firmware update	No
data integrity	No
Ambient conditions	
Ambient temperature during operation	
• horizontal installation, min.	-40 °C; = Tmin (incl. condensation/frost)
• horizontal installation, max.	70 °C; = Tmax; > +60 °C Number of simultaneously controllable outputs max. 8x 0.5 A, max. total current per group 2 A
• vertical installation, min.	-40 °C; = Tmin
• vertical installation, max.	40 °C; = Tmax
Altitude during operation relating to sea level	
• Installation altitude above sea level, max.	5 000 m
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 140 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	
• 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	
— Resistant to commercially available coolants and lubricants	Yes; Incl. diesel and oil droplets in the air
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	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on

60721-3-6	request Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to chemically 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!
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Conformal coating

• Coatings for printed circuit board assemblies acc. to EN 61086	Yes; Class 2 for high reliability
• Protection against fouling acc. to EN 60664-3	Yes; Type 1 protection
• 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

Dimensions

Width	35 mm
Height	147 mm
Depth	129 mm

Weights

Weight, approx.	240 g
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Classifications

	Version	Classification
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
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
IDEA	4	3566
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

other



[Confirmation](#)

Environment

[Environmental Confirmations](#)

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