



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 / header | |
| 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 |

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| 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 |

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| <ul style="list-style-type: none"> • Channel status display | Yes; green LED |
| <ul style="list-style-type: none"> • for channel diagnostics | Yes; red LED |
| <ul style="list-style-type: none"> • for module diagnostics | Yes; red LED |
| Potential separation | |
| Potential separation channels | |
| <ul style="list-style-type: none"> • between the channels | No |
| <ul style="list-style-type: none"> • between the channels, in groups of | 4 |
| <ul style="list-style-type: none"> • 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 | |
| <ul style="list-style-type: none"> • environmental product declaration | Yes |
| Global warming potential | |
| — global warming potential, (total) [CO2 eq] | 43.8 kg |
| — global warming potential, (during production) [CO2 eq] | 9.5 kg |
| — global warming potential, (during operation) [CO2 eq] | 34.5 kg |
| — global warming potential, (after end of life cycle) [CO2 eq] | -0.231 kg |
| Highest safety class achievable for safety-related tripping of standard modules | |
| <ul style="list-style-type: none"> • Performance level according to ISO 13849-1 | PL d |
| <ul style="list-style-type: none"> • Category according to ISO 13849-1 | Cat. 3 |
| <ul style="list-style-type: none"> • SIL acc. to IEC 62061 | SIL 2 |
| <ul style="list-style-type: none"> • remark on safety-oriented shutdown | https://support.industry.siemens.com/cs/de/en/view/39198632 |
| product functions / security / header | |
| signed firmware update | No |
| data integrity | No |
| Ambient conditions | |
| Ambient temperature during operation | |
| <ul style="list-style-type: none"> • horizontal installation, min. | -40 °C; = Tmin (incl. condensation/frost) |
| <ul style="list-style-type: none"> • 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 |
| <ul style="list-style-type: none"> • vertical installation, min. | -40 °C; = Tmin |
| <ul style="list-style-type: none"> • vertical installation, max. | 40 °C; = Tmax |
| Altitude during operation relating to sea level | |
| <ul style="list-style-type: none"> • Installation altitude above sea level, max. | 5 000 m |
| <ul style="list-style-type: none"> • 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 | |
| <ul style="list-style-type: none"> • 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 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
- Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04

Yes; Class 3 (excluding trichlorethylene)

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

- 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 2 for high reliability

Yes; Type 1 protection

Yes; Discoloration of coating possible during service life

Yes; Conformal coating, Class A

Dimensions

| | |
|--------|--------|
| Width | 35 mm |
| Height | 147 mm |
| Depth | 129 mm |

Weights

| | |
|-----------------|-------|
| Weight, approx. | 240 g |
|-----------------|-------|

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 | EMV |
|--------------------------|-----|

[Manufacturer Declaration](#)



[China RoHS](#)



[KC](#)

| | | | |
|-----|--------------------------------|----------------------|-------------|
| EMV | For use in hazardous locations | Maritime application | Environment |
|-----|--------------------------------|----------------------|-------------|



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