



Figure similar

SIMATIC S7-1500, digital output module DQ16x24 V DC/0.5A HF; 16 channels in groups of 8; 4 A per group; single-channel diagnostics; substitute value: switching cycle counter for connected actuators. the module supports the safety-oriented shutdown of load groups up to SIL2 according to EN IEC 62061:2021 and Category 3 / PL d according to EN ISO 13849-1:2015. front connector (screw terminals or push-in) to be ordered separately

| General information | |
|--|---|
| Product type designation | DQ 16x24VDC/0.5A HF |
| HW functional status | From FS02 |
| Firmware version | V1.1.0 |
| • FW update possible | Yes |
| Product function | |
| • I&M data | Yes; I&M0 to I&M3 |
| • Isochronous mode | Yes |
| • Prioritized startup | Yes |
| Engineering with | |
| • STEP 7 TIA Portal configurable/integrated from version | V13 SP1 / - |
| • STEP 7 configurable/integrated from version | V5.5 SP3 / - |
| • PROFIBUS from GSD version/GSD revision | V1.0 / V5.1 |
| • PROFINET from GSD version/GSD revision | V2.3 / - |
| Operating mode | |
| • DQ | Yes |
| • DQ with energy-saving function | No |
| • PWM | No |
| • 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 7 A per group |
| Input current | |
| Current consumption, max. | 30 mA |
| output voltage / header | |
| Rated value (DC) | 24 V |
| Power | |
| Power available from the backplane bus | 1.1 W |
| Power loss | |
| Power loss, typ. | 2 W |
| Digital outputs | |
| Type of digital output | Transistor |
| Number of digital outputs | 16 |

| | |
|--|---|
| Current-sourcing | Yes |
| Digital outputs, parameterizable | Yes |
| Short-circuit protection | Yes; Clocked electronically |
| • Response threshold, typ. | 1 A |
| Limitation of inductive shutdown voltage to | L+ (-53 V) |
| Controlling a digital input | Yes |
| Switching capacity of the outputs | |
| • with resistive load, max. | 0.5 A |
| • on lamp load, max. | 5 W |
| Load resistance range | |
| • lower limit | 48 Ω |
| • upper limit | 12 kΩ |
| Output voltage | |
| • for signal "1", min. | L+ (-0.8 V) |
| Output current | |
| • for signal "1" rated value | 0.5 A |
| • for signal "1" permissible range, max. | 0.5 A |
| • for signal "0" residual current, max. | 0.5 mA |
| Output delay with resistive load | |
| • "0" to "1", max. | 100 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 inductive load, max. | 0.5 Hz; According to IEC 60947-5-1, DC-13 |
| • on lamp load, max. | 10 Hz |
| Total current of the outputs | |
| • Current per channel, max. | 0.5 A; see additional description in the manual |
| • Current per group, max. | 4 A; see additional description in the manual |
| • Current per module, max. | 8 A; see additional description in the manual |
| Cable length | |
| • shielded, max. | 1 000 m |
| • unshielded, max. | 600 m |
| Isochronous mode | |
| Execution and activation time (TCO), min. | 70 μs |
| Bus cycle time (TDP), min. | 250 μs |
| 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 | Yes |
| • 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 | 8 |
| • between the channels and backplane bus | Yes |

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| 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 FS02 |
| 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 |
| Ambient conditions | |
| Ambient temperature during operation | |
| • horizontal installation, min. | -30 °C; From FS03 |
| • horizontal installation, max. | 60 °C |
| • vertical installation, min. | -30 °C; From FS03 |
| • vertical installation, max. | 40 °C |
| Altitude during operation relating to sea level | |
| • Installation altitude above sea level, max. | 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual |
| Dimensions | |
| Width | 35 mm |
| Height | 147 mm |
| Depth | 129 mm |
| Weights | |
| Weight, approx. | 230 g |