



SIMATIC S7-1500, digital output module, DQ16xDC 24V/0.5A BA, 16 channels in groups of 8, 4 A per group; 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. delivery incl. front connector push-in

| General information | |
|--|---|
| Product type designation | DQ 16x24VDC/0.5A BA |
| HW functional status | From FS01 |
| Firmware version | V1.0.0 |
| <ul style="list-style-type: none"> FW update possible | Yes |
| Product function | |
| <ul style="list-style-type: none"> I&M data | Yes; I&M0 to I&M3 |
| <ul style="list-style-type: none"> Isochronous mode | No |
| <ul style="list-style-type: none"> Prioritized startup | Yes |
| Engineering with | |
| <ul style="list-style-type: none"> STEP 7 TIA Portal configurable/integrated from version | V13 / V13 |
| <ul style="list-style-type: none"> STEP 7 configurable/integrated from version | V5.5 SP3 / - |
| <ul style="list-style-type: none"> PROFIBUS from GSD version/GSD revision | V1.0 / V5.1 |
| <ul style="list-style-type: none"> PROFINET from GSD version/GSD revision | V2.3 / - |
| Operating mode | |
| <ul style="list-style-type: none"> DQ | Yes |
| <ul style="list-style-type: none"> DQ with energy-saving function | No |
| <ul style="list-style-type: none"> PWM | No |
| <ul style="list-style-type: none"> Oversampling | No |
| <ul style="list-style-type: none"> MSO | 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 | 1.15 W |
| Power loss | |
| Power loss, typ. | 2.2 W |
| Digital outputs | |
| Type of digital output | Transistor |
| Number of digital outputs | 16 |
| Current-sourcing | Yes |
| Digital outputs, parameterizable | No |
| Short-circuit protection | Yes |

| | |
|--|---|
| • 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 |
| Interrupts/diagnostics/status information | |
| Diagnostics function | No |
| Substitute values connectable | No |
| Alarms | |
| • Diagnostic alarm | No |
| • Maintenance interrupt | No |
| Diagnoses | |
| • Monitoring the supply voltage | No |
| • Wire-break | No |
| • Short-circuit | No |
| • Group error | No |
| Diagnostics indication LED | |
| • RUN LED | Yes; green LED |
| • ERROR LED | Yes; red LED |
| • Monitoring of the supply voltage (PWR-LED) | Yes; green LED |
| • Channel status display | Yes; green LED |
| • for channel diagnostics | No |
| • for module diagnostics | No |
| Potential separation | |
| Potential separation channels | |
| • between the channels | No |
| • between the channels, in groups of | 8 |
| • 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 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
- SIL acc. to IEC 62061
- remark on safety-oriented shutdown

Cat. 3
 SIL 2
<https://support.industry.siemens.com/cs/de/de/view/39198632>

Ambient conditions

Ambient temperature during operation

- horizontal installation, min. -30 °C; from FS04
- horizontal installation, max. 60 °C
- vertical installation, min. -30 °C; from FS04
- 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 | 25 mm |
| Height | 147 mm |
| Depth | 129 mm |

Weights

| | |
|-----------------|-------|
| Weight, approx. | 230 g |
|-----------------|-------|

Other

Note: Supplied incl. 40-pole push-in front connectors

last modified: 5/6/2022 