



SIMATIC S7-1500, digital output module, DQ 64xDC 24V/0.3A BA, 64 channels in groups of 16, 2 A per group at 60 °C, sinking output, 35 mm wide, 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. cables and terminal blocks to be ordered separately as accessories

| General information                                         |                                                                           |
|-------------------------------------------------------------|---------------------------------------------------------------------------|
| Product type designation                                    | DQ 64x24VDC/0.3A BA                                                       |
| HW functional status                                        | From FS01                                                                 |
| Firmware version                                            | V1.0.0                                                                    |
| • FW update possible                                        | Yes                                                                       |
| Product function                                            |                                                                           |
| • I&M data                                                  | Yes; I&M0 to I&M3                                                         |
| • Isochronous mode                                          | No                                                                        |
| • Prioritized startup                                       | No                                                                        |
| Engineering with                                            |                                                                           |
| • STEP 7 TIA Portal configurable/integrated from version    | V16 with HSP 0319 / V17                                                   |
| • 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                    | V2.35 / -                                                                 |
| 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                        | No                                                                        |
| 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                       |
| external protection for power supply lines (recommendation) | 24 V DC/6 A miniature circuit breaker with type B tripping characteristic |
| Input current                                               |                                                                           |
| Current consumption, max.                                   | 90 mA; without load                                                       |
| output voltage / header                                     |                                                                           |
| Rated value (DC)                                            | 24 V                                                                      |
| Power                                                       |                                                                           |
| Power available from the backplane bus                      | 0.6 W                                                                     |
| Power loss                                                  |                                                                           |
| Power loss, typ.                                            | 3.5 W                                                                     |
| Digital outputs                                             |                                                                           |
| Type of digital output                                      | Transistor                                                                |
| Number of digital outputs                                   | 64                                                                        |
| Current-sinking                                             | No                                                                        |

|                                              |                                                |
|----------------------------------------------|------------------------------------------------|
| Current-sourcing                             | Yes                                            |
| Digital outputs, parameterizable             | No                                             |
| Short-circuit protection                     | Yes                                            |
| Limitation of inductive shutdown voltage to  | L+ (-53 V)                                     |
| Controlling a digital input                  | Yes                                            |
| Switching capacity of the outputs            |                                                |
| • with resistive load, max.                  | 0.3 A                                          |
| • on lamp load, max.                         | 5 W                                            |
| Load resistance range                        |                                                |
| • lower limit                                | 80 $\Omega$                                    |
| • upper limit                                | 10 k $\Omega$                                  |
| Output voltage                               |                                                |
| • for signal "1", min.                       | L+ (-0.8 V)                                    |
| Output current                               |                                                |
| • for signal "1" rated value                 | 0.3 A                                          |
| • for signal "1" permissible range, max.     | 0.3 A                                          |
| • for signal "0" residual current, max.      | 0.5 mA                                         |
| Output delay with resistive load             |                                                |
| • "0" to "1", max.                           | 100 $\mu$ s                                    |
| • "1" to "0", max.                           | 500 $\mu$ s                                    |
| 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.                  | 0.3 A                                          |
| • Current per group, max.                    | 2 A                                            |
| • Current per module, max.                   | 8 A                                            |
| Total current of the outputs (per module)    |                                                |
| horizontal installation                      |                                                |
| — up to 60 °C, max.                          | 8 A                                            |
| vertical installation                        |                                                |
| — up to 40 °C, max.                          | 8 A                                            |
| 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                                   |
| • MAINT LED                                  | No                                             |
| • Monitoring of the supply voltage (PWR-LED) | Yes; via SIMATIC TOP connect connection module |
| • Channel status display                     | Yes; via SIMATIC TOP connect connection module |
| • for channel diagnostics                    | No                                             |
| • for module diagnostics                     | No                                             |
| Potential separation                         |                                                |
| Potential separation channels                |                                                |

|                                                                                                                                                                                                          |                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• between the channels</li> <li>• between the channels, in groups of</li> <li>• between the channels and backplane bus</li> </ul>                                 | No<br>16; 32 when using SIMATIC TOP connect connection module<br>Yes |
| <b>Isolation</b>                                                                                                                                                                                         |                                                                      |
| Isolation tested with                                                                                                                                                                                    | 707 V DC (type test)                                                 |
| <b>Standards, approvals, certificates</b>                                                                                                                                                                |                                                                      |
| Suitable for safety functions                                                                                                                                                                            | No                                                                   |
| Suitable for safety-related tripping of standard modules                                                                                                                                                 | Yes; From FS01                                                       |
| Highest safety class achievable for safety-related tripping of standard modules                                                                                                                          |                                                                      |
| <ul style="list-style-type: none"> <li>• Performance level according to ISO 13849-1</li> <li>• Category according to ISO 13849-1</li> <li>• SIL acc. to IEC 62061</li> </ul>                             | PL d<br>Cat. 3<br>SIL 2                                              |
| <b>Ambient conditions</b>                                                                                                                                                                                |                                                                      |
| Ambient temperature during operation                                                                                                                                                                     |                                                                      |
| <ul style="list-style-type: none"> <li>• horizontal installation, min.</li> <li>• horizontal installation, max.</li> <li>• vertical installation, min.</li> <li>• vertical installation, max.</li> </ul> | -30 °C<br>60 °C<br>-30 °C<br>40 °C                                   |
| Altitude during operation relating to sea level                                                                                                                                                          |                                                                      |
| <ul style="list-style-type: none"> <li>• Installation altitude above sea level, max.</li> </ul>                                                                                                          | 5 000 m                                                              |
| <b>Dimensions</b>                                                                                                                                                                                        |                                                                      |
| Width                                                                                                                                                                                                    | 35 mm                                                                |
| Height                                                                                                                                                                                                   | 147 mm                                                               |
| Depth                                                                                                                                                                                                    | 129 mm                                                               |
| <b>Weights</b>                                                                                                                                                                                           |                                                                      |
| Weight, approx.                                                                                                                                                                                          | 270 g                                                                |
| <b>Other</b>                                                                                                                                                                                             |                                                                      |
| Note:                                                                                                                                                                                                    | Please order cable and connection modules separately                 |

last modified:

8/16/2023 