

Siemens  
EcoTech



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                                              |                                                                           |
| Rated value (DC)                                            | 24 V                                                                      |
| Power                                                       |                                                                           |
| Power consumption from the backplane bus                    | 0.6 W                                                                     |
| Power loss                                                  |                                                                           |
| Power loss, typ.                                            | 3.5 W                                                                     |

|                                                  |                                           |
|--------------------------------------------------|-------------------------------------------|
| <b>Address area</b>                              |                                           |
| Address space per module                         |                                           |
| • Inputs                                         | 0 byte                                    |
| • Outputs                                        | 8 byte                                    |
| <b>Digital outputs</b>                           |                                           |
| 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                                       |
| Digital output functions, parameterizable        |                                           |
| • Switching tripped by comparison values         | No                                        |
| • Freely usable digital output                   | No                                        |
| • PWM output                                     | No                                        |
| • Digital output with oversampling               | No                                        |
| Switching capacity of the outputs                |                                           |
| • with resistive load, max.                      | 0.3 A                                     |
| • on lamp load, max.                             | 5 W                                       |
| Load resistance range                            |                                           |
| • lower limit                                    | 80 Ω                                      |
| • upper limit                                    | 10 kΩ                                     |
| 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 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.                      | 0.3 A                                     |
| • Current per group, max.                        | 2 A                                       |
| • Current per module, max.                       | 8 A                                       |
| Cable length                                     |                                           |
| • shielded, max.                                 | 1 000 m                                   |
| • unshielded, max.                               | 600 m                                     |
| <b>Interrupts/diagnostics/status information</b> |                                           |
| 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                                                                                                                                                                                                                                 |        |                                                                                                                                                                  |                |
| <ul style="list-style-type: none"><li>• RUN LED</li><li>• ERROR LED</li><li>• MAINT LED</li><li>• Monitoring of the supply voltage (PWR-LED)</li><li>• Channel status display</li><li>• for channel diagnostics</li><li>• for module diagnostics</li></ul> |        | Yes; green LED<br>Yes; red LED<br>No<br>Yes; via SIMATIC TOP connect connection module<br>Yes; via SIMATIC TOP connect connection module<br>No<br>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                                                                                             |                |
| Isolation                                                                                                                                                                                                                                                  |        |                                                                                                                                                                  |                |
| Isolation tested with                                                                                                                                                                                                                                      |        | 707 V DC (type test)                                                                                                                                             |                |
| Standards, approvals, certificates                                                                                                                                                                                                                         |        |                                                                                                                                                                  |                |
| Siemens Eco Profile (SEP)                                                                                                                                                                                                                                  |        | Siemens EcoTech                                                                                                                                                  |                |
| Suitable for safety functions                                                                                                                                                                                                                              |        | No                                                                                                                                                               |                |
| Suitable for safety-related tripping of standard modules                                                                                                                                                                                                   |        | Yes; from FS01                                                                                                                                                   |                |
| Ecological footprint                                                                                                                                                                                                                                       |        |                                                                                                                                                                  |                |
| <ul style="list-style-type: none"><li>• environmental product declaration</li></ul>                                                                                                                                                                        |        | 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"><li>• Performance level according to ISO 13849-1</li><li>• Category according to ISO 13849-1</li><li>• SIL acc. to IEC 62061</li><li>• remark on safety-oriented shutdown</li></ul>                                      |        | PL d<br>Cat. 3<br>SIL 2<br><a href="https://support.industry.siemens.com/cs/de/en/view/39198632">https://support.industry.siemens.com/cs/de/en/view/39198632</a> |                |
| Security                                                                                                                                                                                                                                                   |        |                                                                                                                                                                  |                |
| safely removing data                                                                                                                                                                                                                                       |        | No                                                                                                                                                               |                |
| Ambient conditions                                                                                                                                                                                                                                         |        |                                                                                                                                                                  |                |
| 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                                                                                                                                                          |                |
| Absolute humidity                                                                                                                                                                                                                                          |        |                                                                                                                                                                  |                |
| <ul style="list-style-type: none"><li>• dew point, min.</li></ul>                                                                                                                                                                                          |        | -60 °C; suitable for dry room applications                                                                                                                       |                |
| Dimensions                                                                                                                                                                                                                                                 |        |                                                                                                                                                                  |                |
| Width                                                                                                                                                                                                                                                      |        | 35 mm                                                                                                                                                            |                |
| Height                                                                                                                                                                                                                                                     |        | 147 mm                                                                                                                                                           |                |
| Depth                                                                                                                                                                                                                                                      |        | 129 mm                                                                                                                                                           |                |
| Weights                                                                                                                                                                                                                                                    |        |                                                                                                                                                                  |                |
| Weight, approx.                                                                                                                                                                                                                                            |        | 270 g                                                                                                                                                            |                |
| Other                                                                                                                                                                                                                                                      |        |                                                                                                                                                                  |                |
| Note:                                                                                                                                                                                                                                                      |        | Please order cable and connection modules separately                                                                                                             |                |
| Classifications                                                                                                                                                                                                                                            |        |                                                                                                                                                                  |                |
|                                                                                                                                                                                                                                                            |        | Version                                                                                                                                                          | Classification |
|                                                                                                                                                                                                                                                            | eClass | 16                                                                                                                                                               | 27-24-22-04    |
|                                                                                                                                                                                                                                                            | 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

[Miscellaneous](#)



### General Product Approval

### For use in hazardous locations



[Manufacturer Declaration](#)

[China RoHS](#)

[CCC-Ex](#)



### For use in hazardous locations

### Maritime application

[Type Examination Certificate](#)

[Miscellaneous](#)

[CCC-Ex](#)



### Maritime application

### Environment



[NK / Nippon Kaiji Kyokai](#)



[CCS \(China Classification Society\)](#)

[KR \(Korean Register of Shipping\)](#)



### Environment



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