




SIMATIC S7-1500 digital input/output module, DI 32x24VDC BA SNK / SRC, 32 channels in groups of 16, input delay typ. 3.2 ms input type 3 (IEC 61131), sinking/sourcing input, DQ 32XDC 24V/0.3A SNK BA; 32 channels in groups of 16; 2 A per group at 60 °C; sourcing output; 35 mm wide; cables and terminal blocks to be ordered separately as accessories

| General information | |
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| Product type designation | DI 32 x 24 V DC / DQ 32 x 24 V DC/0.3A SNK 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 | |
| • DI | Yes |
| • Counter | No |
| • DQ | Yes |
| • DQ with energy-saving function | No |
| • PWM | No |
| • Cam control (switching at comparison values) | No |
| • Oversampling | No |
| • MSI | Yes |
| • 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 4 A per group |
| external protection for power supply lines (recommendation) | input side: 24 V DC/4 A miniature circuit breaker with type B or C tripping characteristic; output side: 24 V DC/6 A miniature circuit breaker with type B tripping characteristic |
| Input current | |
| Current consumption, max. | 45 mA; without load |
| output voltage / header | |
| Rated value (DC) | 24 V |
| Power | |
| Power available from the backplane bus | 0.6 W |
| Power loss | |

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| Power loss, typ. | 4.7 W |
| Digital inputs | |
| Number of digital inputs | 32 |
| Digital inputs, parameterizable | No |
| Source/sink input | Yes |
| Input characteristic curve in accordance with IEC 61131, type 3 | Yes |
| Number of simultaneously controllable inputs | |
| • Number of simultaneously controllable inputs | 32 |
| horizontal installation | |
| — up to 60 °C, max. | 32 |
| vertical installation | |
| — up to 40 °C, max. | 16 |
| Input voltage | |
| • Rated value (DC) | 24 V |
| • for signal "0" | -5 ... +5 V (reference potential is COM) |
| • for signal "1" | -11 ... -30 V; +11 ... +30 V (reference potential is COM) |
| Input current | |
| • for signal "1", typ. | 2.7 mA |
| Input delay (for rated value of input voltage) | |
| for standard inputs | |
| — parameterizable | No |
| — at "0" to "1", min. | 3 ms |
| — at "0" to "1", max. | 4 ms |
| — at "1" to "0", min. | 3 ms |
| — at "1" to "0", max. | 4 ms |
| for interrupt inputs | |
| — parameterizable | No |
| for technological functions | |
| — parameterizable | No |
| Cable length | |
| • shielded, max. | 1 000 m |
| • unshielded, max. | 600 m |
| Digital outputs | |
| Type of digital output | Transistor |
| Number of digital outputs | 32 |
| Current-sinking | Yes |
| Current-sourcing | No |
| Digital outputs, parameterizable | No |
| Short-circuit protection | No; external fusing necessary, max. 4 A per group, tripping characteristic type B or C |
| 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 Ω |
| • upper limit | 10 kΩ |
| Output voltage | |
| • for signal "1", min. | M+ (0.5 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 |

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| 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. | 4 A |
| Total current of the outputs (per module) | |
| horizontal installation | |
| — up to 60 °C, max. | 4 A |
| vertical installation | |
| — up to 40 °C, max. | 4 A |
| Cable length | |
| • shielded, max. | 1 000 m |
| • unshielded, max. | 600 m |
| Encoder | |
| Connectable encoders | |
| • 2-wire sensor | Yes |
| — permissible quiescent current (2-wire sensor), max. | 1.5 mA |
| Interrupts/diagnostics/status information | |
| Diagnostics function | No |
| Substitute values connectable | No |
| Alarms | |
| • Diagnostic alarm | No |
| • Maintenance interrupt | No |
| • Hardware 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 | |
| • between the channels | No |
| • between the channels, in groups of | 16; 32 when using SIMATIC TOP connect connection module |
| • between the channels and backplane bus | Yes |
| Isolation | |
| Isolation tested with | 707 V DC (type test) |
| Ambient conditions | |
| Ambient temperature during operation | |
| • horizontal installation, min. | -30 °C |
| • horizontal installation, max. | 60 °C |
| • vertical installation, min. | -30 °C |
| • vertical installation, max. | 40 °C |
| Altitude during operation relating to sea level | |
| • Installation altitude above sea level, max. | 5 000 m |
| Dimensions | |
| Width | 35 mm |
| Height | 147 mm |
| Depth | 129 mm |
| Weights | |

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| Weight, approx. | 250 g |
| Other | |
| Note: | Please order cable and connection modules separately |
| last modified: | 8/16/2023  |