# SIEMENS

**Data sheet**

SIMATIC S7-1500, digital input module DI 16x24 V DC HF, 16 channels in groups of 16; of which 2 inputs as counters can be used; input delay 0.05..20 ms; input type 3 (IEC 61131); diagnostics; hardware interrupts: front connector (screw terminals or push-in) to be ordered separately

| General information | |
|---|---|
| Product type designation | DI 16x24VDC HF |
| HW functional status | from FS04 |
| Firmware version | V2.2.0 |
| ● 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 | |
| ● DI | Yes |
| ● Counter | Yes |
| ● Oversampling | No |
| ● MSI | 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 |
| Input current | |
| Current consumption, max. | 20 mA; with 24 V DC supply |
| Power | |
| Power available from the backplane bus | 1.1 W |
| Power loss | |
| Power loss, typ. | 2.6 W |
| Digital inputs | |
| Number of digital inputs | 16 |
| Digital inputs, parameterizable | Yes |
| Source/sink input | P-reading |
| Input characteristic curve in accordance with IEC 61131, type 3 | Yes |
| Digital input functions, parameterizable | |
| ● Gate start/stop | Yes |

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| | |
|---|---|
| ● Freely usable digital input | Yes |
| ● Counter | |
| — Number, max. | 2 |
| — Counting frequency, max. | 6 kHz |
| — Counting width | 32 bit |
| — Counting direction up/down | Up |
| **Input voltage** | |
| ● Rated value (DC) | 24 V |
| ● for signal "0" | -30 to +5 V |
| ● for signal "1" | +11 to +30V |
| **Input current** | |
| ● for signal "1", typ. | 2.5 mA |
| **Input delay (for rated value of input voltage)** | |
| for standard inputs | |
| — parameterizable | Yes; 0.05 / 0.1 / 0.4 / 1.6 / 3.2 / 12.8 / 20 ms |
| — at "0" to "1", min. | 0.05 ms |
| — at "0" to "1", max. | 20 ms |
| — at "1" to "0", min. | 0.05 ms |
| — at "1" to "0", max. | 20 ms |
| for interrupt inputs | |
| — parameterizable | Yes |
| for technological functions | |
| — parameterizable | Yes |
| **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 |
| **Isochronous mode** | |
| Filtering and processing time (TCI), min. | 80 µs; At 50 µs filter time |
| Bus cycle time (TDP), min. | 250 µs |
| **Interrupts/diagnostics/status information** | |
| Diagnostics function | Yes |
| Alarms | |
| ● Diagnostic alarm | Yes |
| ● Hardware interrupt | Yes |
| Diagnoses | |
| ● Monitoring the supply voltage | Yes |
| ● Wire-break | Yes; to I < 350 µA |
| ● Short-circuit | 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 | Yes; red LED |
| ● for module diagnostics | Yes; red LED |
| **Potential separation** | |
| Potential separation channels | |
| ● between the channels | No |
| ● between the channels, in groups of | 16 |
| ● between the channels and backplane bus | Yes |
| ● between the channels and the power supply of the electronics | No |
| **Isolation** | |
| Isolation tested with | 707 V DC (type test) |
| **Standards, approvals, certificates** | |

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| | |
|---|---|
| Suitable for safety functions | No |
| **Ambient conditions** | |
| Ambient temperature during operation | |
| ● horizontal installation, min. | -30 °C; From FS05 |
| ● horizontal installation, max. | 60 °C |
| ● vertical installation, min. | -30 °C; From FS05 |
| ● 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. | 240 g |

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