SIEMENS

Data sheet

6ES7521-1BL00-0AB0



SIMATIC S7-1500, digital input module DI 32x24 V DC HF, 32 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

Figure similar

| Constal information | |
|--|--|
| General information | |
| Product type designation | DI 32x24VDC HF |
| HW functional status | from FS04 |
| Firmware version | V2.2.1 |
| 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. | 40 mA; 20 mA per group with 24 V DC supply |
| Power | |
| Power available from the backplane bus | 1.1 W |
| Power loss | |
| Power loss, typ. | 4.2 W |
| Digital inputs | |
| Number of digital inputs | 32 |
| 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 |
| Freely usable digital input | Yes |
| Counter | |

| — Number, max. | 2 |
|--|--|
| — Counting frequency, max. | 6 kHz; FS04 and FW V2.2.1 or higher |
| — 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 |
| Bus cycle time (TDP), min. Interrupts/diagnostics/status information | 250 μs |
| Interrupts/diagnostics/status information | |
| Interrupts/diagnostics/status information Diagnostics function | 250 μs Yes |
| Interrupts/diagnostics/status information Diagnostics function Alarms | Yes |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm | Yes |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt | Yes |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses | Yes Yes Yes |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage | Yes Yes Yes Yes |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage • Wire-break | Yes Yes Yes Yes; to I < 350 µA |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit | Yes Yes Yes Yes |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED | Yes Yes Yes Yes; to I < 350 µA No |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED • RUN LED | Yes Yes Yes Yes; to I < 350 µA No |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED • RUN LED • ERROR LED | Yes Yes Yes Yes; to I < 350 µA No Yes; green LED Yes; red LED |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED • RUN LED • ERROR LED • Monitoring of the supply voltage (PWR-LED) | Yes Yes Yes Yes Yes; to I < 350 µA No Yes; green LED Yes; red LED Yes; green LED |
| Interrupts/diagnostics/status information Diagnostics function Alarms Diagnostic alarm Hardware interrupt Diagnoses Monitoring the supply voltage Wire-break Short-circuit Diagnostics indication LED RUN LED RUN LED RUN LED Channel status display | Yes Yes Yes Yes; to I < 350 µA No Yes; green LED Yes; green LED Yes; green LED Yes; green LED |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED • RUN LED • RUN LED • ERROR LED • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics | Yes Yes Yes Yes Yes; to I < 350 µA No Yes; green LED Yes; red LED Yes; green LED Yes; green LED Yes; green LED Yes; green LED |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED • RUN LED • RUN LED • ERROR LED • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics • for module diagnostics | Yes Yes Yes Yes; to I < 350 µA No Yes; green LED Yes; green LED Yes; green LED Yes; green LED |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED • RUN LED • RUN LED • ERROR LED • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics • for module diagnostics • Potential separation | Yes Yes Yes Yes Yes; to I < 350 µA No Yes; green LED Yes; red LED Yes; green LED Yes; green LED Yes; green LED Yes; green LED |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED • RUN LED • RUN LED • ERROR LED • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics • for module diagnostics • for module diagnostics • for module diagnostics | Yes Yes Yes Yes Yes; to I < 350 µA No Yes; green LED Yes; red LED Yes; green LED Yes; green LED Yes; green LED Yes; red LED Yes; red LED |
| Interrupts/diagnostics/status information Diagnostics function Alarms Diagnostic alarm Hardware interrupt Diagnoses Monitoring the supply voltage Wire-break Short-circuit Diagnostics indication LED RUN LED ERROR LED Konitoring of the supply voltage (PWR-LED) Channel status display for channel diagnostics for module diagnostics Potential separation Potential separation channels between the channels | Yes Yes Yes Yes Yes; to I < 350 µA No Yes; green LED Yes; red LED Yes; green LED Yes; green LED Yes; green LED Yes; red LED Yes; red LED Yes; red LED |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED • RUN LED • RUN LED • ERROR LED • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics • for module diagnostics • for module diagnostics • for module diagnostics • between the channels • between the channels • between the channels, in groups of | Yes Yes Yes Yes Yes; to I < 350 µA No Yes; green LED Yes; red LED Yes; green LED Yes; green LED Yes; green LED Yes; red LED Yes; red LED Yes; red LED Yes; red LED |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED • RUN LED • RUN LED • RUN LED • Channel status display • for channel diagnostics • for module diagnostics • for module diagnostics • for module diagnostics • between the channels • between the channels, in groups of • between the channels and backplane bus | Yes Yes Yes Yes Yes Yes; to I < 350 μA No Yes; green LED Yes; red LED Yes; green LED Yes; green LED Yes; green LED Yes; red LED Yes; red LED Yes; red LED Yes; red LED |
| Interrupts/diagnostics/status information Diagnostics function Alarms Diagnostic alarm Hardware interrupt Diagnoses Monitoring the supply voltage Wire-break Short-circuit Diagnostics indication LED RUN LED RUN LED RUN LED Konnitoring of the supply voltage (PWR-LED) Channel status display for channel diagnostics for module diagnostics for module diagnostics between the channels between the channels, in groups of between the channels and backplane bus between the channels and the power supply of the | Yes Yes Yes Yes Yes; to I < 350 µA No Yes; green LED Yes; red LED Yes; green LED Yes; green LED Yes; green LED Yes; red LED Yes; red LED Yes; red LED Yes; red LED |
| Interrupts/diagnostics/status information Diagnostics function Alarms Diagnostic alarm Hardware interrupt Diagnoses Monitoring the supply voltage Wire-break Short-circuit Diagnostics indication LED RUN LED RUN LED RUN LED Run leD Grannel status display for channel diagnostics for module diagnostics for module diagnostics between the channels between the channels and backplane bus between the channels and the power supply of the electronics | Yes Yes Yes Yes Yes Yes; to I < 350 μA No Yes; green LED Yes; red LED Yes; green LED Yes; green LED Yes; green LED Yes; red LED Yes; red LED Yes; red LED Yes; red LED |
| Interrupts/diagnostics/status information Diagnostics function Alarms Diagnostic alarm Hardware interrupt Diagnoses Monitoring the supply voltage Wire-break Short-circuit Diagnostics indication LED RUN LED RUN LED RUN LED RUN LED Channel status display for channel diagnostics for module diagnostics for module diagnostics Detween the channels between the channels and backplane bus between the channels and the power supply of the electronics Isolation | Yes Yes Yes Yes Yes; to I < 350 µA No Yes; green LED Yes; red LED Yes; green LED Yes; green LED Yes; red LED Yes; red LED Yes; red LED Yes; red LED |
| Interrupts/diagnostics/status information Diagnostics function Alarms Diagnostic alarm Hardware interrupt Diagnoses Monitoring the supply voltage Wire-break Short-circuit Diagnostics indication LED RUN LED RUN LED RUN LED RUN LED Channel status display for channel diagnostics for module diagnostics for module diagnostics between the channels between the channels and backplane bus between the channels and the power supply of the electronics Isolation Isolation tested with | Yes Yes Yes Yes Yes Yes; to I < 350 μA No Yes; green LED Yes; red LED Yes; green LED Yes; green LED Yes; green LED Yes; red LED Yes; red LED Yes; red LED Yes; red LED |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED • RUN LED • RUN LED • RUN LED • ERROR LED • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics • for module diagnostics • for module diagnostics • for module diagnostics • between the channels • between the channels • between the channels and backplane bus • between the channels and the power supply of the electronics Isolation tested with Standards, approvals, certificates | Yes Yes Yes Yes Yes; to I < 350 μA No Yes; green LED Yes; green LED Yes; green LED Yes; green LED Yes; red LED Yes; red LED Yes; red LED Yes; red LED 707 V DC (type test) |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED • RUN LED • RUN LED • ERROR LED • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics • for module diagnostics • for module diagnostics • for module diagnostics • between the channels • between the channels • between the channels and backplane bus • between the channels and the power supply of the electronics Isolation tested with Standards, approvals, certificates Suitable for safety functions | Yes Yes Yes Yes Yes; to I < 350 µA No Yes; green LED Yes; green LED Yes; green LED Yes; green LED Yes; green LED Yes; red LED Yes; red LED Yes; red LED Yes; red LED |
| Interrupts/diagnostics/status information Diagnostics function Alarms • Diagnostic alarm • Hardware interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED • RUN LED • RUN LED • RUN LED • ERROR LED • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics • for module diagnostics • for module diagnostics • for module diagnostics • between the channels • between the channels • between the channels and backplane bus • between the channels and the power supply of the electronics Isolation tested with Standards, approvals, certificates | Yes Yes Yes Yes Yes; to I < 350 μA No Yes; green LED Yes; green LED Yes; green LED Yes; green LED Yes; red LED Yes; red LED Yes; red LED Yes; red LED 707 V DC (type test) |

| 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. | 260 g |
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