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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