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Data sheet 6ES7521-1BH00-0AB0

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	

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● Gate start/stop	Yes
● 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

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Isolation	
Isolation tested with	707 V DC (type test)
Standards, approvals, certificates	
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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