

Overview



- 16 and 32-channel digital input modules
- For flexible adaptation of the controller to the corresponding task
- For subsequent expansion of the system with additional inputs
- 35 mm wide modules with parameters and diagnostic functions
- 25 mm wide modules for use in tight spaces: particularly economical, without parameters or diagnostic functions

Technical specifications

	6ES7521-1BH00-0AB0 DI 16x24 V DC HF	6ES7521-1BL00-0AB0 DI 32x24 V DC HF	6ES7521-1BH50-0AA0 DI 16x24 V DC SRC BA	6ES7521-1FH00-0AA0 DI 16x230 V AC BA
General information				
Product function				
• I&M data	Yes; I&M0 to I&M3	Yes; I&M0 to I&M3	Yes; I&M0 to I&M3	Yes; I&M0 to I&M3
Engineering with				
• STEP 7 TIA Portal can be configured/integrated as of version	V12 / V12	V12 / V12	V12 / V12	V12 / V12
• STEP 7 can be configured/integrated as of version	V5.5 SP3 / -	V5.5 SP3 / -	V5.5 SP3 / -	V5.5 SP3 / -
• PROFINET as of GSD version/GSD revision	V2.3 / -	V2.3 / -	V2.3 / -	V2.3 / -
Operating mode				
• MSI	Yes	Yes	Yes	Yes
Supply voltage				
Type of supply voltage	DC	DC		
Rated value (DC)	24 V	24 V		
Reverse polarity protection	Yes	Yes		
Digital inputs				
Number of digital inputs	16	32	16	16
m/p-reading	p-reading	p-reading	m-reading	p-reading
Input characteristic curve in accordance with IEC 61131, type 1				Yes
Input characteristic curve in accordance with IEC 61131, type 3	Yes	Yes	Yes	
Input voltage				
• Type of input voltage	DC	DC	DC	AC
• Rated value, AC				230 V; 120/230 V AC; 60/50 Hz
• Rated value, DC	24 V	24 V	24 V	
• for signal "0"	-30 to +5 V	-30 to +5 V	30 to -5 V	0 to 40 V AC
• for signal "1"	11 to 30 V	11 to 30 V	-11 to -30 V	79 to 264 V AC
Input current				
• for signal "1", typ.	2.5 mA	2.5 mA	4.5 mA	11 mA; At 230 V AC and 5.5 mA at 120 V AC
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	Yes; 0.05 / 0.1 / 0.4 / 1.6 / 3.2 / 12.8 / 20 ms	No	No
• for interrupt inputs				
- Parameterizable	Yes	Yes	No	No

SIMATIC S7-1500

Digital modules

SM 521 digital input modules

Technical specifications (continued)

	6ES7521-1BH00-0AB0 DI 16x24 V DC HF	6ES7521-1BL00-0AB0 DI 32x24 V DC HF	6ES7521-1BH50-0AA0 DI 16x24 V DC SRC BA	6ES7521-1FH00-0AA0 DI 16x230 V AC BA
Cable length				
• Cable length, shielded, max.	1 000 m	1 000 m	1 000 m	1 000 m
• Cable length unshielded, max.	600 m	600 m	600 m	600 m
Encoder				
Connectable encoders				
• 2-wire sensor	Yes	Yes	Yes	Yes
- Permissible quiescent current (2-wire sensor), max.	1.5 mA	1.5 mA	1.5 mA	2 mA
Isochronous mode				
Isochronous operation (application synchronized up to terminal)	Yes	Yes	No	No
Filtering and processing time (TCI), min.	80 µs; At 50 µs filter time	80 µs; At 50 µs filter time		
Bus cycle time (TDP), min.	250 µs	250 µs		
Interrupts/diagnostics/status information				
Alarms				
• Diagnostic alarm	Yes	Yes	No	No
• Hardware interrupt	Yes	Yes	No	No
Diagnostic messages				
• Diagnostics	Yes	Yes	No	
• Monitoring the supply voltage	Yes	Yes	No	No
• Wire break	Yes; to I < 350 µA	Yes; to I < 350 µA	No	No
• Short circuit	No	No	No	No
• Fuse blown	No	No	No	No
Diagnostics indication LED				
• RUN LED	Yes; Green LED	Yes; Green LED	Yes; Green LED	Yes; Green LED
• ERROR LED	Yes; Red LED	Yes; Red LED	Yes; Red LED	Yes; Red LED
• Monitoring the supply voltage	Yes; Green LED	Yes; Green LED	No	No
• Channel status display	Yes; Green LED	Yes; Green LED	Yes; Green LED	Yes; Green LED
• for channel diagnostics	Yes; Red LED	Yes; Red LED	No	No
• for module diagnostics	Yes; Red LED	Yes; Red LED	No	Yes; Red LED
Galvanic isolation				
Electrical isolation channels				
• between the channels and the backplane bus	Yes	Yes	Yes	Yes
Isolation				
Isolation checked with	707 V DC (type test)	707 V DC (type test)	707 V DC (type test)	2500 V DC
Decentralized operation				
Prioritized startup	Yes	Yes	Yes	Yes
Dimensions				
Width	35 mm	35 mm	35 mm	35 mm
Height	147 mm	147 mm	147 mm	147 mm
Depth	129 mm	129 mm	129 mm	129 mm
Weights				
Weight, approx.	240 g	260 g	230 g	300 g

Technical specifications (continued)

	6ES7521-1BH10-0AA0 DI 16 x 24 V DC BA	6ES7521-1BL10-0AA0 DI 32 x 24 V DC BA
General information		
Product function		
• I&M data	Yes; I&M0 to I&M3	Yes; I&M0 to I&M3
Engineering with		
• STEP 7 TIA Portal can be configured/integrated as of version	V13 / V13	V13 / V13
• STEP 7 can be configured/integrated as of version	V5.5 SP3 / -	V5.5 SP3 / -
• PROFINET as of GSD version/GSD revision	V2.3 / -	V2.3 / -
Operating mode		
• MSI	Yes	Yes
Supply voltage		
Type of supply voltage	DC	DC
Rated value (DC)	24 V	24 V
Digital inputs		
Number of digital inputs	16	32
m/p-reading	p-reading	p-reading
Input characteristic curve in accordance with IEC 61131, type 3	Yes	Yes
Input voltage		
• Rated value, DC	24 V	24 V
• for signal "0"	-30 to +5 V	-30 to +5 V
• for signal "1"	11 to 30 V	11 to 30 V
Input current		
• for signal "1", typ.	2.7 mA	2.7 mA
Input delay (for rated value of input voltage)		
• for standard inputs		
- Parameterizable	No	No
• for interrupt inputs		
- Parameterizable	No	No
Cable length		
• Cable length, shielded, max.	1 000 m	1 000 m
• Cable length unshielded, max.	600 m	600 m
Encoder		
Connectable encoders		
• 2-wire sensor	Yes	Yes
- Permissible quiescent current (2-wire sensor), max.	1.5 mA	1.5 mA
Isochronous mode		
Isochronous operation (application synchronized up to terminal)	No	No
Interrupts/diagnostics/status information		
Alarms		
• Diagnostic alarm	No	No
• Hardware interrupt	No	No
Diagnostic messages		
• Diagnostics	No	No
• Monitoring the supply voltage	No	No
• Wire break	No	No
• Short circuit	No	No
• Fuse blown	No	No
Diagnostics indication LED		
• RUN LED	Yes; Green LED	Yes; Green LED
• ERROR LED	Yes; Red LED	Yes; Red LED
• MAINT LED	No	No
• Monitoring the supply voltage	No	No
• Channel status display	Yes; Green LED	Yes; Green LED
• for channel diagnostics	No	No
• for module diagnostics	No	No

SIMATIC S7-1500

Digital modules

SM 521 digital input modules

Technical specifications (continued)

	6ES7521-1BH10-0AA0 DI 16 x 24 V DC BA	6ES7521-1BL10-0AA0 DI 32 x 24 V DC BA
Galvanic isolation		
Electrical isolation channels		
• between the channels and the backplane bus	Yes	Yes
Isolation		
Isolation checked with	707 V DC (type test)	707 V DC (type test)
Decentralized operation		
Prioritized startup	Yes	Yes
Dimensions		
Width	25 mm	25 mm
Height	147 mm	147 mm
Depth	129 mm	129 mm
Weights		
Weight, approx.	230 g	260 g

Ordering data

SM 521 digital input modules

Module width 35 mm;
with parameters and diagnostic
functions

16 inputs, 24 V DC, isolated,
parameterizable diagnostics and
hardware interrupts

6ES7521-1BH00-0AB0

32 inputs, 24 V DC, isolated,
parameterizable diagnostics and
hardware interrupts

6ES7521-1BL00-0AB0

16 inputs, 24 V DC, isolated,
input delay 3.2 ms

6ES7521-1BH50-0AA0

16 inputs, 230 V AC, isolated,
input delay 20 ms

6ES7521-1FH00-0AA0

Module width 25 mm; without
parameters or diagnostic functions;
front connector (push-in) included
in scope of delivery

16 inputs, 24 V DC, isolated

6ES7521-1BH10-0AA0

32 inputs, 24 V DC, isolated

6ES7521-1BL10-0AA0

Accessories

Front connectors

For 35 mm modules;
including four potential bridges,
cable ties and individual labeling
strips, 40-pin

- Screw terminals
- Push-in

6ES7592-1AM00-0XB0

6ES7592-1BM00-0XB0

6ES7592-1BM00-0XA0

For 25 mm modules;
including cable ties and individual
labeling strips; push-in terminal
40-pin; spare part

Potential bridges for front connectors

6ES7592-3AA00-0AA0

20 units; spare part

DIN A4 labeling sheets

For 35 mm modules;
10 sheets with 10 labeling strips
each for I/O modules; perforated,
Al gray

6ES7592-2AX00-0AA0

For 25 mm modules;
10 sheets with 10 labeling strips
each for I/O modules; perforated,
Al gray

6ES7592-1AX00-0AA0

U connector

6ES7590-0AA00-0AA0

5 units; spare part

Universal front door for I/O modules

For 35 mm modules;
5 front doors; with 5 labeling strips
(front) and 5 cabling diagrams per
front door; spare part

6ES7528-0AA00-7AA0

For 25 mm modules;
5 front doors; with 5 labeling strips
(front) and 5 cabling diagrams per
front door; spare part

6ES7528-0AA00-0AA0