Data sheet

6ES7521-1BH10-0AA0



SIMATIC S7-1500 Digital input module, DI 16x24 V DC BA, 16 channels in groups of 16, input delay typ. 3.2 ms, input type 3 (IEC 61131); Delivery incl. front connector Push-in

Product type designation HW functional status From FS01	General information	
Firmware version Fiv update possible Fives Froduct function I &M data I & Isochronous mode Prioritized startup STEP 7 TIA Portal configurable/integrated from version STEP 7 TIA Portal configurable/integrated from version STEP 7 TIA Portal configurable/integrated from version FROFIBUS from GSD version/GSD revision PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision PROFINET from SSD version/GSD revision V2.3 /- Operating mode I DI SUMPLY voltage Rated value (DC) permissible range, lower limit (DC) Power variable from the backplane bus Power variable from the backplane bus Power loss Power loss, typ. Digital inputs No Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Rated value (DC) For signal "0" Rated value (DC) For signal "1" For signal "2" For signal	Product type designation	DI 16 x 24 V DC BA
Product function RM data	HW functional status	From FS01
Product function • 18M data • 18M data • 18M or 18	Firmware version	V1.0.0
I I I I I I I I I I I I I I I I I I I	 FW update possible 	Yes
■ Isochronous mode ■ Prioritized startup ■ Yes Engineering with ■ STEP 7 TIA Portal configurable/integrated from version ■ STEP 7 Tonfigurable/integrated from version ■ V5.5 SP3 /- ■ PROFIBUS from GSD version/GSD revision ■ V2.3 /- Operating mode ■ DI ■ Yes ■ Counter ■ No ■ Yes Supply voltage Rated value (DC) ■ 24 V ■ permissible range, lower limit (DC) ■ 28.8 V Power available from the backplane bus ■ 1.05 W Power loss Power loss Power loss, typ. Digital inputs Number of digital inputs No ■ Preading Input characteristic curve in accordance with IEC 61131, type 3 Input voltage ■ Rated value (DC) ■ 4 V ■ 6 resignal "0" ■ 30 to +5 V ■ 6 for signal "1" ■ 11 to +30V Input deverted ■ 6 for signal "1", typ.		
Prioritized startup Prioritized startup Prioritized startup STEP7 7 IA Portal configurable/integrated from version STEP7 7 configurable/integrated from version PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision PROFINET from GSD version/GSD revision PROFINET from GSD version/GSD revision Properating mode DI Counter No MSI Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Power Power available from the backplane bus Power loss, typ. Power loss, typ. Digital inputs Number of digital inputs Digital inputs, parameterizable No Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Pate d value (DC) Friedding Preading Input voltage Pate d value (DC) For signal "0" Sol to +5 V For signal "1" Halt to +30V Input current For signal "1", typ. Input delay (for rated value of input voltage)	• I&M data	Yes; I&M0 to I&M3
Engineering with STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision ProfineTrom GSD revision Pro	 Isochronous mode 	No
STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version STEP 7 configurable/integrated from version PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision DI Yes Counter Mo MSI Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) permissible range to the backplane bus 1.05 W Power Power available from the backplane bus 1.8 W Digital inputs Number of digital inputs Digital inputs, parameterizable Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Rated value (DC) Freading Preading Input voltage Rated value (DC) Freading Preading Preading Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Rated value (DC) For signal "1" Freading Preading P	 Prioritized startup 	Yes
version STEP 7 configurable/integrated from version PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision V2.3 /- Operating mode DI Counter No MSI Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) 28.8 V Power Power loss Power loss, typ. Digital inputs Number of digital inputs Digital inputs, parameterizable Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Rated value (DC) for signal "1" +11 to +30V Input current for signal "1", typ. Input delay (for rated value of input voltage)	Engineering with	
PROFIBUS from GSD version/GSD revision PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision Operating mode DI Yes Counter No MSI Yes Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) permissible from the backplane bus Power Power loss Power loss Power loss United inputs Number of digital inputs Number of digital inputs Digital inputs, parameterizable Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Rated value (DC) of r signal "0" of r signal "1" Input current of or signal "1", typ. Input delay (for rated value of input voltage) Input delay (for rated value of input voltage)		V13 / V13
PROFINET from GSD version/GSD revision Operating mode OI OI OCUMENT	 STEP 7 configurable/integrated from version 	V5.5 SP3 / -
Operating mode • DI • Counter • MSI Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) power Power Power loss, typ. 1.8 W Digital inputs Number of digital inputs Digital inputs, parameterizable No Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage • Rated value (DC) • for signal "0" • 30 to +5 V • for signal "1" Input current • for signal "1", typ. Input delay (for rated value of input voltage)	 PROFIBUS from GSD version/GSD revision 	V1.0 / V5.1
DI Counter Counter No MSI Yes Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) 28.8 V Power Power available from the backplane bus 1.05 W Power loss Power loss, typ. Digital inputs Number of digital inputs Digital inputs, parameterizable Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Rated value (DC) Freading Fr	 PROFINET from GSD version/GSD revision 	V2.3 / -
Ocunter	Operating mode	
Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (• DI	Yes
Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) 28.8 V Power Power available from the backplane bus 1.05 W Power loss Power loss, typ. 1.8 W Digital inputs Number of digital inputs Number of digital inputs Digital inputs, parameterizable Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Rated value (DC) of or signal "0" of or signal "1" Possible voltage For signal "1" For signal "1" For signal "1", typ. Pareal input voltage	Counter	No
Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) 28.8 V Power Power available from the backplane bus 1.05 W Power loss Power loss, typ. 1.8 W Digital inputs Number of digital inputs Digital inputs, parameterizable Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Rated value (DC) of or signal "1" of or signal "1" Input current of or signal "1", typ. Pass V 1.8 W 1.8 W 1.8 W 1.8 W 1.9 W 1.8 W 1.9 W 1.9 V 1.8 W 1.1 Input voltage 1.0 V 2.7 mA Input delay (for rated value of input voltage)	• MSI	Yes
permissible range, lower limit (DC) permissible range, upper limit (DC) Power Power available from the backplane bus Power loss Power loss, typ. Digital inputs Number of digital inputs Digital inputs, parameterizable Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Rated value (DC) of or signal "0" of or signal "1" Input current of or signal "1", typ. Input delay (for rated value of input voltage)	Supply voltage	
Power Power available from the backplane bus Power loss Power loss, typ. 1.8 W Digital inputs Number of digital inputs Digital inputs, parameterizable Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Rated value (DC) of or signal "0" of or signal "1" Input current of or signal "1", typ. Input delay (for rated value of input voltage)	` '	24 V
Power available from the backplane bus Power loss Power loss, typ. 1.8 W Digital inputs Number of digital inputs Digital inputs, parameterizable No Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Rated value (DC) for signal "0" for signal "1" Input current for signal "1", typ. Input delay (for rated value of input voltage)	permissible range, lower limit (DC)	19.2 V
Power loss Power loss, typ. 1.8 W Digital inputs Number of digital inputs Digital inputs, parameterizable No Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Rated value (DC) of or signal "0" of or signal "1" Input current of or signal "1", typ. Input delay (for rated value of input voltage)	permissible range, upper limit (DC)	28.8 V
Power loss, typ. 1.8 W Digital inputs Number of digital inputs Digital inputs, parameterizable Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Rated value (DC) for signal "0" for signal "1" For signal "1" For signal "1" For signal "1", typ. Input delay (for rated value of input voltage)	Power	
Power loss, typ. Digital inputs Number of digital inputs Digital inputs, parameterizable Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage • Rated value (DC) • for signal "0" • for signal "1" Input current • for signal "1", typ. Input delay (for rated value of input voltage)	Power available from the backplane bus	1.05 W
Number of digital inputs Digital inputs, parameterizable Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Rated value (DC) for signal "0" for signal "1" Input current for signal "1", typ. Input delay (for rated value of input voltage)	Power loss	
Number of digital inputs Digital inputs, parameterizable Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage Rated value (DC) for signal "0" for signal "1" Input current for signal "1", typ. Input delay (for rated value of input voltage)	Power loss, typ.	1.8 W
Digital inputs, parameterizable Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage • Rated value (DC) • for signal "0" • for signal "1" Input current • for signal "1", typ. Input delay (for rated value of input voltage)	Digital inputs	
Source/sink input Input characteristic curve in accordance with IEC 61131, type 3 Input voltage • Rated value (DC) • for signal "0" • for signal "1" • for signal "1" • for signal "1", typ. Input current • for signal "1", typ. Input delay (for rated value of input voltage)	Number of digital inputs	16
Input characteristic curve in accordance with IEC 61131, type 3 Input voltage • Rated value (DC) • for signal "0" • for signal "1" • for signal "1" • for signal "1", typ. Input current • for signal "1", typ. 2.7 mA Input delay (for rated value of input voltage)	Digital inputs, parameterizable	No
Input voltage • Rated value (DC) • for signal "0" • for signal "1" Input current • for signal "1", typ. 2.7 mA Input delay (for rated value of input voltage)	Source/sink input	P-reading
 Rated value (DC) for signal "0" for signal "1" to +5 V for signal "1" to +30V Input current for signal "1", typ. 2.7 mA Input delay (for rated value of input voltage)		Yes
 for signal "0" for signal "1" lnput current for signal "1", typ. 2.7 mA Input delay (for rated value of input voltage) 	Input voltage	
for signal "1" +11 to +30V Input current for signal "1", typ. 2.7 mA Input delay (for rated value of input voltage)	Rated value (DC)	24 V
Input current • for signal "1", typ. 2.7 mA Input delay (for rated value of input voltage)	● for signal "0"	-30 to +5 V
• for signal "1", typ. 2.7 mA Input delay (for rated value of input voltage)	• for signal "1"	+11 to +30V
Input delay (for rated value of input voltage)	Input current	
	● for signal "1", typ.	2.7 mA
for standard inputs	Input delay (for rated value of input voltage)	
	for standard inputs	

— parameterizable	
	No
— at "0" to "1", min.	3 ms
— at "0" to "1", max.	4 ms
— at "1" to "0", min.	3 ms
— at "1" to "0", max.	4 ms
for interrupt inputs	
— parameterizable	No
for technological functions	110
— parameterizable	No
Cable length	140
-	1 000 m
• shielded, max.	600 m
unshielded, max.	000 M
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
 permissible quiescent current (2-wire sensor), 	1.5 mA
max.	
Interrupts/diagnostics/status information	
Diagnostics function	No
Alarms	
Diagnostic alarm	No
Hardware interrupt	No
Diagnoses	
Monitoring the supply voltage	No
Wire-break	No
Short-circuit Pierrestina indication LED	No
Diagnostics indication LED	Vacantary LED
• RUN LED	Yes; green LED
• ERROR LED	Yes; red LED
 Monitoring of the supply voltage (PWR-LED) 	No
 Channel status display 	Yes; green LED
 for channel diagnostics 	No
 for module diagnostics 	No
Potential separation	
Potential separation channels	
between the channels	No
- bottoon the enamed	
 hetween the channels, in groups of 	16
between the channels, in groups of between the channels and backplane bus	16 Vas
between the channels and backplane bus	16 Yes
between the channels and backplane bus Isolation	Yes
between the channels and backplane bus	
between the channels and backplane bus Isolation	Yes
between the channels and backplane bus Isolation Isolation tested with	Yes
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions	Yes 707 V DC (type test)
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions	Yes 707 V DC (type test)
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation	Yes 707 V DC (type test) No
 between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation horizontal installation, min. 	Yes 707 V DC (type test) No -30 °C; from FS04
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max.	Yes 707 V DC (type test) No -30 °C; from FS04 60 °C
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max. vertical installation, min.	Yes 707 V DC (type test) No -30 °C; from FS04 60 °C -30 °C; from FS04
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max. vertical installation, min. vertical installation, max.	Yes 707 V DC (type test) No -30 °C; from FS04 60 °C
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max. vertical installation, min. vertical installation, max. Altitude during operation relating to sea level	707 V DC (type test) No -30 °C; from FS04 60 °C -30 °C; from FS04 40 °C
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max. vertical installation, min. vertical installation, max. Altitude during operation relating to sea level Installation altitude above sea level, max.	Yes 707 V DC (type test) No -30 °C; from FS04 60 °C -30 °C; from FS04
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max. vertical installation, min. vertical installation, max. Altitude during operation relating to sea level	707 V DC (type test) No -30 °C; from FS04 60 °C -30 °C; from FS04 40 °C
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max. vertical installation, min. vertical installation, max. Altitude during operation relating to sea level Installation altitude above sea level, max.	707 V DC (type test) No -30 °C; from FS04 60 °C -30 °C; from FS04 40 °C
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max. vertical installation, min. vertical installation, max. Altitude during operation relating to sea level Installation altitude above sea level, max. Dimensions	Yes 707 V DC (type test) No -30 °C; from FS04 60 °C -30 °C; from FS04 40 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max. vertical installation, min. vertical installation, max. Altitude during operation relating to sea level Installation altitude above sea level, max. Dimensions Width	Yes 707 V DC (type test) No -30 °C; from FS04 60 °C -30 °C; from FS04 40 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max. vertical installation, min. vertical installation, max. Altitude during operation relating to sea level Installation altitude above sea level, max. Dimensions Width Height Depth	Yes 707 V DC (type test) No -30 °C; from FS04 60 °C -30 °C; from FS04 40 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 25 mm 147 mm
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. Altitude during operation relating to sea level • Installation altitude above sea level, max. Dimensions Width Height Depth Weights	Yes 707 V DC (type test) No -30 °C; from FS04 60 °C -30 °C; from FS04 40 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 25 mm 147 mm 129 mm
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max. vertical installation, min. vertical installation, max. Attitude during operation relating to sea level Installation altitude above sea level, max. Dimensions Width Height Depth Weights Weight, approx.	Yes 707 V DC (type test) No -30 °C; from FS04 60 °C -30 °C; from FS04 40 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 25 mm 147 mm
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. Altitude during operation relating to sea level • Installation altitude above sea level, max. Dimensions Width Height Depth Weights Weight, approx. Other	Yes 707 V DC (type test) No -30 °C; from FS04 60 °C -30 °C; from FS04 40 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 25 mm 147 mm 129 mm
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max. vertical installation, min. vertical installation, max. Attitude during operation relating to sea level Installation altitude above sea level, max. Dimensions Width Height Depth Weights Weight, approx.	Yes 707 V DC (type test) No -30 °C; from FS04 60 °C -30 °C; from FS04 40 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 25 mm 147 mm 129 mm
between the channels and backplane bus Isolation Isolation tested with Standards, approvals, certificates Suitable for safety functions Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. Altitude during operation relating to sea level • Installation altitude above sea level, max. Dimensions Width Height Depth Weights Weight, approx. Other	Yes 707 V DC (type test) No -30 °C; from FS04 60 °C -30 °C; from FS04 40 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 25 mm 147 mm 129 mm