Data sheet

6ES7526-1BH00-0AB0



SIMATIC S7-1500, F digital input module, F-DI 16x 24 V DC PROFIsafe; 35 mm width; up to PL E (ISO 13849-1)/ SIL 3 (IEC 61508)

General information	
Product type designation	F-DI 16x24VDC
Firmware version	
FW update possible	Yes
Product function	
• I&M data	Yes; I&M0 to I&M3
Engineering with	
STEP 7 TIA Portal configurable/integrated from version	V13 SP1 with HSP 0086
Operating mode	
• DI	Yes
• MSI	No
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
power supply according to NEC Class 2 required	No
Input current	
Current consumption (rated value)	50 mA; without load
Current consumption, max.	60 mA; without load
Encoder supply	
Number of outputs	4
Short-circuit protection	Yes; Electronic (response threshold 0.7 A to 1.8 A)
24 V encoder supply	
• 24 V	Yes; min. L+ (-1.5 V)
Short-circuit protection	Yes
 Output current, max. 	300 mA; Max. 100 mA when mounted vertically
Power	
Power available from the backplane bus	0.9 W
Power loss	
Power loss, typ.	4.6 W
Address area	
Address space per module	
• Inputs	9 byte; S7-300/400F CPU, 8 byte
Outputs	5 byte; S7-300/400F CPU, 4 byte
Hardware configuration	
Automatic encoding	Yes
 Electronic coding element type F 	Yes
Digital inputs	
Number of digital inputs	16

SourceAris Reput Yes Properties Yes Properties Yes Properties Yes	Input characteristic curve in accordance with IEC 61131, type 1 Input voltage • Rated value (DC) • for signal "0" • for signal "1" Input current • for signal "1", typ.	Yes 24 V -30 to +5 V +15 to +30 V 3.7 mA
Ratiod value (DC)	Input voltage • Rated value (DC) • for signal "0" • for signal "1" Input current • for signal "1", typ.	24 V -30 to +5 V +15 to +30 V 3.7 mA
Packed value (DC)	 Rated value (DC) for signal "0" for signal "1" Input current for signal "1", typ. 	-30 to +5 V +15 to +30 V 3.7 mA
• for signal "1" +15 to 430 V Input current	 for signal "0" for signal "1" Input current for signal "1", typ. 	-30 to +5 V +15 to +30 V 3.7 mA
• for signal "1" + 15 to +30 V expert current	for signal "1" Input current for signal "1", typ.	+15 to +30 V 3.7 mA Yes
	Input current • for signal "1", typ.	3.7 mA Yes
• or signal 11. typ. 3.7 mA input delay (for rated value of input voltage)	● for signal "1", typ.	Yes
Imput clays (for nated value of injust voltage)	· · · · · · · · · · · · · · · · · · ·	Yes
For standard injusts	Input delay (for rated value of input voltage)	
— parameterizable — at "0" to "1", min. — at "0" to "1", min. — at "1" to "0", min. — shielded, max. — shielded, max		
— at "0" to "1", max. — at "1" to "0", min. — at "1" to "0", min. — at "1" to "0", min.	•	
— at 1" to 0", max.		
Shielded, max. 1000 m 1		
• shielded, max. 500 m Interrupts/degonatics/status information Yes Alarms • Diagnostic slarm Yes • Diagnostic slarm Yes • Hardware interrupt No Diagnoses *** • Monitoring the supply voltage Yes • Wire-break No • Short-circuit Yes • Croup error Yes Diagnostics indication LED *** • RN ILED Yes; green LED • ERROR LED Yes; red LED • Channel status display Yes; red LED • For channel diagnostics Yes; red LED • For formachiel diagnostics Yes; red LED • For third separation channels Yes • between the channels and backplane bus Yes • Studate for safety functions Yes Studate for safety functions Yes • For formance level according to ISO 13849-1 PLe • Studate for safety functions Sit as to IEO 61508 • For bothility of failure (for service life of 20 years and repair turner * 100 hours) <td< td=""><td></td><td>20 ms</td></td<>		20 ms
• unshielded, max. 500 m	Cable length	
Interrupts/diagnostics/status information Diagnostics function Yes Alaims Diagnostic alarm Yes Hardware interrupt No Diagnostic Di	shielded, max.	1 000 m
Diagnostics function Yes Alarms Diagnoses Hardware interrupt No Diagnoses Monthoring the supply voltage Wire-break No Short-circuit Group erro Ves Channel diagnostics indication LED ERROR LED Yes; green LED Channel status display For channel diagnostics For channel diagnostics For channel diagnostics Ves; red LED Fotential separation Paration Protection Standards approvals, certificates Suitable for safety functions Wes Standards, approvals, certificates Sutable for safety functions Performance level according to ISO 13849-1 Performance level according to FDavg in accordance with SiL3 Probability of failure (for service life 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SiL3 Ambient temperature during operation Photizontal installation, min. Pore demand mode: PFDavg in accordance with SiL3 Probability of failure (for service life 720 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SiL3 Ambient temperature during operation Phorizontal installation, min. Pore Collegions Pore C	<u> </u>	500 m
Alarms	nterrupts/diagnostics/status information	
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Hardware interrupt		
Diagnoses Yes Monitoring the supply voltage Yes No No No No No No No N	Diagnostic alarm	Yes
Monitoring the supply voltage Wire-break No Short-circuit Short-circuit For supply voltage Short-circuit Short-circuit For supply voltage For supply ves For channel status display For channel diagnostics For channel diagnostics For channel diagnostics For supply ves For supply	Hardware interrupt	No
Wire-break Short-circuit Short-circuit Group error Yes Diagnostics indication LED RUN LED REROR LED Perror Perror Potential separation For module diagnostics Potential separation channels between the channels and backplane bus between the channels and backplane bus between the channels and backplane bus Standards, approvals, certificates Suitable for safety functions Flighest safety class achievable in safety mode Protential scancillor (510 So 13849-1) Standar of Saliure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with Sli.3 — High demand/continuous mode: PFH in accordance with Sli.3 Ambient conditions Ambient temperature during operation — horizontal installation, min. — horizontal installation, min. — horizontal installation, min. — vertical installation, min. — Vertic	Diagnoses	
• Short-circuit • Group error Pes Group error Pes Group error Pes FUN LED • RUN LED • ERROR LED • Channel status display • Channel status display • For channel diagnostics • for module diagnostics • Fotential separation channels • between the channels and backplane bus • Fotential separation channels • between the channels and backplane bus Fotential separation channels • Peter or constitute the diagnostics Suitable for safety functions Fes Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508 • SIL 3 Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, min. • horizontal installation, min. • horizontal installation, min. • vertical installation, min.	 Monitoring the supply voltage 	Yes
Diagnostics indication LED RUN LED Channel status display For channel diagnostics for channel diagnostics for module diagnostics Every red LED Potential separation Potential separation channels between the channels and backplane bus Potential separation channels between the channels and backplane bus Potential separation channels Solation Potential separation channels Bolation tested with 707 V DC (type test) Standards, approvals, certificates Suitable for safety functions Potermance level according to ISO 13849-1 Sil. acc. to IEC 61508 Probability of fallure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with Sil.3 Probability of fallure (for service life of 20 years and repair time of 100 hours) — Ligh demand/continuous mode: PFH in accordance with Sil.3 Ambient conditions Ambient conditions Ambient conditions Ambient silialition, min. Phorizontal installation, min. Phorizontal installation, min. Pore Channel Conditions Width 35 mm Height Height Height Height	Wire-break	No
Diagnostics indication LED RUN LED RUN LED RUN LED Pes; green LED Pes; red LED Potential separation Potential separation Potential Potential Separation Potential Potenti	Short-circuit	Yes
• RUN LED • ERROR LED • Channel status display • for channel diagnostics • for module diagnostics • between the channels • between the channels and backplane bus • between the channels and backplane bus Isolation Isolation tested with 707 V DC (type test) Standards, approvals, certificates Suitable for safety functions • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508 • Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, min. • horizontal installation, min. • vertical installation, min.	Group error	Yes
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• for channel diagnostics	• ERROR LED	Yes; red LED
• for module diagnostics Potential separation Potential separation channels • between the channels and backplane bus Isolation Isolation Isolation Isolation tested with 707 V DC (type test) Standards, approvals, certificates Suitable for safety functions Performance level according to ISO 13849-1 • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508 Probability of failure (for service life of 20 years and repair time of 100 hours) —Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, min. • vertical installation, min. • vertical installation, max. • wertical installation, max. • wertical installation, max. • Width 35 mm Height	Channel status display	Yes; green LED
Potential separation Potential separation channels	for channel diagnostics	Yes; red LED
Potential separation channels	for module diagnostics	Yes; red LED
Solation	Potential separation	
Isolation tested with 707 V DC (type test) Standards, approvals, certificates Suitable for safety functions Yes Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 PLe • SIL acc. to IEC 61508 SIL 3 Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 Ambient conditions Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, min. • horizontal installation, min. • vertical installation, min. • vertical installation, max. • Vertical installation,	Potential separation channels	
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Suitable for safety functions Suitable for safety functions Performance level according to ISO 13849-1 SIL acc. to IEC 61508 Probability of failure (for service life of 20 years and repair time of 100 hours) Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, min. vertical installation, min. vertical installation, max. vertical installation, max. Width Height 147 mm	solation	
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Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 PLe • SIL acc. to IEC 61508 SIL 3 Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 Ambient conditions Ambient temperature during operation • horizontal installation, min. 0 °C • horizontal installation, max. 60 °C • vertical installation, min. 0 °C • vertical installation, max. 40 °C Dimensions Width 35 mm Height 147 mm	Standards, approvals, certificates	
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Performance level according to ISO 13849-1 SIL acc. to IEC 61508 SIL 3 Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, max. • vertical installation, max. • Vertical installation, max. • Vertical installation, max. • Vertical installation, max. • Vertical installation, max. • 10°C	Highest safety class achievable in safety mode	
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SIL3 — High demand/continuous mode: PFH in accordance with SIL3 Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • Vertical installation, max. 40 °C Dimensions Width 147 mm	Probability of failure (for service life of 20 years and repair time of 100 hours)	
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Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • horizontal installation, max. • vertical installation, min. • vertical installation, min. • vertical installation, max. Width Bight 147 mm		
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Dimensions Width 35 mm Height 147 mm		
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Height 147 mm		
5		
Donth 120 mm		
·	Depth	129 mm
Weights		
Weight, approx. 280 g	Weight, approx.	280 g

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