

Overview



- Digital inputs for the fail-safe SIMATIC S7 systems
- For connecting:
 - Switches and 2-wire proximity switches
 - Sensors according to NAMUR and mechanical contacts, also for signals from hazardous areas
- With integral safety functions for fail-safe operation
- Can be used in fail-safe operation
 - Centrally: with S7-31xF-2 DP
 - Distributed in ET 200M: with SIMATIC IM 151-7 F-CPU, S7-31xF-2 DP, S7-416F-2 and S7-400F/FH
- In standard operation can be used in the same way as S7-300 modules

Technical specifications

Article number	6ES7326-1RF01-0AB0 SM326, 8DE, DC24V, FAIL-SAFE	6ES7326-1BK02-0AB0 SM326, F-DI 24 X DC24V, FAIL-SAFE
General information		
Product type designation	F-DI 8x24VDC Namur	
Supply voltage		
Rated value (DC)	24 V	
Input current		
from load voltage L+ (without load), max.	160 mA	450 mA
from backplane bus 5 V DC, max.	90 mA	100 mA
Encoder supply		
Number of outputs	8	4; Isolated
Type of output voltage	8.2 V DC	
Output current		
• Rated value	400 mA	
Power loss		
Power loss, typ.	4.5 W	10 W
Digital inputs		
Number of digital inputs	8	24
Number of simultaneously controllable inputs		
all mounting positions		
- up to 40 °C, max.	8	24
- up to 60 °C, max.	8	24; (at 24 V) or 18 (at 28.8 V)
Input voltage		
• Type of input voltage	DC	
• Rated value (DC)	24 V	
• for signal "0"	-30 to +5V	
• for signal "1"	+11 to +30V	
Input current		
• for signal "0", max. (permissible quiescent current)	0.35 to 1.2 mA	2 mA
• for signal "1", typ.	2.1 to 7 mA	10 mA
Input delay (for rated value of input voltage)		
for standard inputs		
- at "0" to "1", max.	3.4 ms	
- at "1" to "0", max.	3.4 ms	
for NAMUR inputs		
- at "0" to "1", max.	1.2 to 3 ms	
- at "1" to "0", max.	1.2 to 3 ms	

SIMATIC S7-300 Advanced Controllers

I/O modules

F digital/analog modules

SM 326 F digital input modules - Safety Integrated**Technical specifications (continued)**

Article number	6ES7326-1RF01-0AB0 SM326, 8DE, DC24V, FAIL-SAFE	6ES7326-1BK02-0AB0 SM326, F-DI 24 X DC24V, FAIL-SAFE
Cable length		
• shielded, max.	200 m	200 m
• unshielded, max.	100 m	100 m
Encoder		
Connectable encoders		
• 2-wire sensor		Yes; if short-circuit test is deactivated
- permissible quiescent current (2-wire sensor), max.		2 mA
Interrupts/diagnostics/status information		
Alarms		
• Diagnostic alarm	Yes; Parameterizable	Yes
Diagnostic messages		
• Diagnostic information readable		Yes
Ex(i) characteristics		
Module for Ex(i) protection	Yes	
Maximum values of input circuits (per channel)		
• Co (permissible external capacity), max.	3 µF	
• Io (short-circuit current), max.	13.9 mA	
• Lo (permissible external inductivity), max.	80 mH	
• Po (power of load), max.	33.1 mW	
• Uo (output no-load voltage), max.	10 V	
• Um (fault voltage), max.	60 V DC/30 V AC	
• Ta (permissible ambient temperature), max.	60 °C	60 °C
Potential separation		
Potential separation digital inputs		
• between the channels	Yes	Yes
• between the channels, in groups of		12
• between the channels and backplane bus	Yes	Yes
• between the channels and the power supply of the electronics	Yes	
Isolation		
Isolation tested with		500 V DC/350 V AC
Highest safety class achievable in safety mode		
• acc. to DIN VDE 0801		AK 6
• acc. to EN 954	Cat. 4	Cat. 4
• SIL acc. to IEC 61508	SIL 2 (single-channel), SIL 3 (two-channel)	SIL 3
Use in hazardous areas		
• Test number KEMA	99 ATEX 2671 X	
Connection method		
required front connector	1x 40-pin	40-pin
Dimensions		
Width	80 mm	80 mm
Height	125 mm	125 mm
Depth	120 mm	120 mm
Weights		
Weight, approx.	482 g	442 g

Ordering data	Article No.	Ordering data	Article No.
SM 326 F digital input module		Active bus module	6ES7195-7HC00-0XA0
24 inputs, 24 V DC	6ES7326-1BK02-0AB0	BM 1 x 80 for 1 module with 80 mm width	
8 inputs, 24 V DC, NAMUR	6ES7326-1RF01-0AB0	SITOP power supply module	6ES7307-1EA01-0AA0
S7 Distributed Safety V5.4 programming tool		for ET 200M; 120/230 V AC, 24 V DC, 5 A; Type PS 307-1E	
Task: Configuration software for configuring fail-safe user programs for SIMATIC S7-300F, S7-400F, WinAC RTX F, ET 200S, ET 200M, ET 200iSP, ET 200pro, ET 200eco		Front connectors	
Requirement: STEP 7 V5.3 SP3 and higher		40-pin, with screw contacts	
Floating license	6ES7833-1FC02-0YA5	• 1 unit	6ES7392-1AM00-0AA0
Floating license for 1 user, license key download without software or documentation ¹⁾ ; email address required for delivery	6ES7833-1FC02-0YH5	• 100 units	6ES7392-1AM00-1AB0
		40-pin, with spring-loaded contacts	
S7 Distributed Safety upgrade		• 1 unit	6ES7392-1BM01-0AA0
From V5.x to V5.4; floating license for 1 user	6ES7833-1FC02-0YE5	• 100 units	6ES7392-1BM01-1AB0
STEP 7 Safety Advanced V14 SP1		Front door, higher version, for F-modules	6ES7328-7AA10-0AA0
Task: Engineering tool for configuring and programming fail-safe user programs for SIMATIC S7-1200 FC, S7-1500F, S7-1500F Software Controller, S7-300F, S7-400F, WinAC RTX F, ET 200SP F Controller and the fail-safe ET 200SP, ET 200S, ET 200M, ET 200iSP, ET 200pro and ET 200eco I/O		For F-modules; for connecting 1.3 mm ² /16 AWG wires; wiring diagram and labels in yellow	
Requirement: STEP 7 Professional V14 SP1		Labeling strips	6ES7392-2XX20-0AA0
Floating license for 1 user, software and documentation on DVD; license key on USB flash drive	6ES7833-1FA14-0YA5	For F-modules (spare part); 10 units	
Floating license for 1 user, software, documentation and license key for download ¹⁾ ; email address required for delivery	6ES7833-1FA14-0YH5	Label cover	6ES7392-2XY20-0AA0
		For F-modules (spare part); 10 units	
DIN rail for active bus modules		LK 393 cable guide	6ES7393-4AA10-0AA0
for max. 5 active bus modules for hot swapping function		For F-modules; L+ and M connections; 5 units	
• 483 mm (19") long	6ES7195-1GA00-0XA0	SIMATIC Manual Collection	6ES7998-8XC01-8YE0
• 530 mm long	6ES7195-1GF30-0XA0	Electronic manuals on DVD, multilingual: LOGO!, SIMADYN, SIMATIC bus components, SIMATIC C7, SIMATIC distributed I/O, SIMATIC HMI, SIMATIC Sensors, SIMATIC NET, SIMATIC PC Based Automation, SIMATIC PCS 7, SIMATIC PG/PC, SIMATIC S7, SIMATIC Software, SIMATIC TDC	
• 620 mm long	6ES7195-1GG30-0XA0	SIMATIC Manual Collection update service for 1 year	6ES7998-8XC01-8YE2
• 2000 mm long	6ES7195-1GC00-0XA0	Current "Manual Collection" DVD and the three subsequent updates	

¹⁾ For up-to-date information and download availability, see:
<http://www.siemens.com/tia-online-software-delivery>

SIMATIC S7-300 Advanced Controllers

I/O modules

SIPLUS S7-300 F digital/analog modules

SIPLUS S7-300 SM 326 - Safety Integrated**Overview**

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Note:

SIPLUS extreme products are based on SIMATIC standard products. The contents listed here were taken from the respective standard products. SIPLUS extreme specific information was added.

Technical specifications

Article number	6AG1326-1BK02-2AB0	6AG1326-1BK02-2AY0	6AG1326-1RF01-4AB0
Based on	6ES7326-1BK02-0AB0 SIPLUS S7-300 SM326F DI24	6ES7326-1BK02-0AB0 SIPLUS S7-300 SM326F DI24	6ES7326-1RF01-0AB0 SIPLUS S7-300 SM326F DI8 NAMUR
Ambient conditions			
Ambient temperature during operation			
• min.	-25 °C; = Tmin	-25 °C; = Tmin	0 °C; = Tmin
• max.	60 °C; = Tmax; *+70 °C where forced convection with a minimum air velocity of 0.7 m/s through the modules and rated voltage of 24 V ±5 % are ensured. If in the course of maintenance or automatic diagnosis it is determined that the admissible specified parameters have been exceeded, the modules should be subjected to a proof test (function check) by the manufacturer.	60 °C; = Tmax; the rated temperature range of -25 ... +55 °C (T1) applies for the use on railway vehicles according to EN50155	60 °C; = Tmax
Extended ambient conditions			
• relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m)	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m)	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m)
Relative humidity			
- With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)		100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance			
- against biologically active substances / conformity with EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!		Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!
- against chemically active substances / conformity with EN 60721-3-3	Yes; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!		Yes; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!
- against mechanically active substances / conformity with EN 60721-3-3	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!		Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!