

SIMATIC S7-1200 Basic Controllers

I/O modules

Fail-safe I/O modules

SM 1226 fail-safe digital input**Overview**

3



- Digital inputs as supplement to the integral I/O of the CPUs
- Integrated into the overall automation for the implementation of safety-related requirements
- With integrated safety functions
- Communication with fail-safe CPUs via PROFIsafe mechanisms
- For flexible adaptation of the controller to the corresponding task
- For subsequent expansion of the system with additional inputs
- Operable exclusively in the central system

Ordering data**Article No.****SM 1226 fail-safe digital input signal module**

16 inputs, 24 V DC (SIL 2/category 3/PL d) or 8 inputs 24 V DC (SIL 3/category 3 or category 4/PL e) or a combination of both

Accessories**Terminal block (spare part)**

With 11 screws, tin-coated; 4 units

Front flap set (spare part)

For modules with a width of 70 mm

STEP 7 Safety Advanced V17**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 200MP, ET 200S, ET 200M, ET 200iSP, ET 200pro and ET 200eco I/O

Requirement:

STEP 7 Professional V17

Note:

As of TIA Portal V16, the SIMATIC STEP 7 Safety software is an integral component of the SIMATIC STEP 7 product setup. The functionality of SIMATIC STEP 7 Safety is activated by means of the license key supplied in each case.

Floating license for 1 user; license key on USB flash drive

Floating license for 1 user; license key for download¹⁾; email address required for delivery

STEP 7 Safety Basic V17**Task:**

Engineering tool for configuring fail-safe user programs for SIMATIC S7-1200 FC

Requirement:

STEP 7 Basic V17 and higher

Note:

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6ES7226-6BA32-0XB0**6ES7292-1AL30-0XA0****6ES7291-1BB30-0XA0****6ES7833-1FA17-0YA5****6ES7833-1FA17-0YH5****6ES7833-1FB17-0YA5****6ES7833-1FB17-0YH5**

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

Technical specifications

Article number	6ES7226-6BA32-0XB0 Digital Input SM 1226, F-DI 16x 24VDC
General information	
Product type designation	SM 1226, F-DI 16x24 V DC
Supply voltage	
Rated value (DC)	24 V
Input current	
from backplane bus 5 V DC, max.	155 mA; Current consumption (SM Bus, 5 V DC): 155 mA
Digital inputs	
<ul style="list-style-type: none"> from load voltage L+ (without load), max. 	130 mA; 130 mA + 6 mA / input used + any Vs1/Vs2 current used
Digital inputs	
Number of digital inputs	16; 16 (1oo1) or 8 (1oo2); Note: You can individually assign each pair of inputs "a.x" and "b.x" as a single (1oo2)-channel or as 2 separate (1oo1)-channels
Number of simultaneously controllable inputs	
horizontal installation - up to 50 °C, max.	16; 16 inputs at 55 °C horizontal
vertical installation - up to 40 °C, max.	16; 16 inputs at 45 °C vertical
Input voltage	
<ul style="list-style-type: none"> for signal "0" for signal "1" 	-30 V DC to +5 V DC 15 V DC to 30 V DC
Input current	
<ul style="list-style-type: none"> for signal "0", max. (permissible quiescent current) for signal "1", typ. 	0.5 mA 5 mA
Input delay (for rated value of input voltage) for standard inputs	
- parameterizable	Yes; 0.8 / 1.6 / 3.2 / 6.4 / 12.8 ms
Interrupts/diagnostics/ status information	
Diagnostics indication LED	
<ul style="list-style-type: none"> for status of the inputs 	Yes

Article number	6ES7226-6BA32-0XB0 Digital Input SM 1226, F-DI 16x 24VDC
Degree and class of protection	
IP degree of protection	IP20
Standards, approvals, certificates	
CE mark	Yes
cULus	Yes
FM approval	Yes
Highest safety class achievable in safety mode	
<ul style="list-style-type: none"> Performance level according to ISO 13849-1 SIL acc. to IEC 61508 	1-channel, Category 3, PL d; 2-channel, Category 3 or 4, PL e SIL 2 (single-channel), SIL 3 (two-channel)
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> min. max. 	0 °C 55 °C
Mechanics/material	
Enclosure material (front)	
<ul style="list-style-type: none"> Plastic 	Yes
Dimensions	
Width	70 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	250 g

SIMATIC S7-1200 Basic Controllers

I/O modules

Fail-safe I/O modules

SM 1226 fail-safe digital output**Overview**

3



- Digital outputs as a supplement to the integral I/O of the CPUs
- Integrated into the overall automation for the implementation of safety-related requirements
- With integrated safety functions
- Communication with fail-safe CPUs via PROFIsafe mechanisms
- For flexible adaptation of the controller to the corresponding task
- For subsequent expansion of the system with additional outputs
- Operable exclusively in the central system

Ordering data**Article No.****SM 1226 fail-safe digital output signal module****6ES7226-6DA32-0XB0**

4 outputs; 24 V DC, current sourcing/sinking

Accessories**Terminal block (spare part)**

With 11 screws, tin-coated; 4 units

6ES7292-1AL30-0XA0**Front flap set (spare part)**

For modules with a width of 70 mm

6ES7291-1BB30-0XA0**STEP 7 Safety Advanced V17****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 I/O ET 200SP, ET 200MP, ET 200S, ET 200M, ET 200iSP, ET 200pro and ET 200eco

Requirement:

STEP 7 Professional V17

Note:

As of TIA Portal V16, the SIMATIC STEP 7 Safety software is an integral component of the SIMATIC STEP 7 product setup. The functionality of SIMATIC STEP 7 Safety is activated by means of the license key supplied in each case.

Floating license for 1 user;
license key on USB flash drive

6ES7833-1FA17-0YA5

Floating license for 1 user;
license key for download¹⁾;
Email address required for delivery

6ES7833-1FA17-0YH5**STEP 7 Safety Basic V17****Task:**

Engineering tool for configuring fail-safe user programs for SIMATIC S7-1200 FC

Requirement:

STEP 7 Basic V17 and higher

Note:

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6ES7833-1FB17-0YA5

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license key for download¹⁾;
email address required for delivery

6ES7833-1FB17-0YH5

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

Technical specifications

Article number	6ES7226-6DA32-0XB0 Digital Output SM 1226, F-DQ 4x 24VDC
General information	
Product type designation	SM 1226 F-DQ 4x 24 VDC
Input current	
from backplane bus 5 V DC, max.	125 mA
Digital outputs	
• from load voltage L+, max.	170 mA
Digital outputs	
Number of digital outputs	4
• in groups of	1
Short-circuit protection	Yes
Switching capacity of the outputs	
• with resistive load, max.	30 Hz
• on lamp load, max.	10 Hz
Output voltage	
• Rated value (DC)	24 V
Output current	
• for signal "1" rated value	2 A
• for signal "0" residual current, max.	P-switch: 0.5 mA, maximum; M-switch: 0.5 mA, maximum
Interrupts/diagnostics/ status information	
Diagnostics indication LED	
• for status of the outputs	Yes
Degree and class of protection	
IP degree of protection	IP20

Article number	6ES7226-6DA32-0XB0 Digital Output SM 1226, F-DQ 4x 24VDC
Standards, approvals, certificates	
CE mark	Yes
cULus	Yes
FM approval	Yes
Highest safety class achievable in safety mode	
• Performance level according to ISO 13849-1	Category 4, PL e
• SIL acc. to IEC 61508	SIL 3
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	55 °C
Mechanics/material	
Enclosure material (front)	
• Plastic	Yes
Dimensions	
Width	70 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	270 g

SIMATIC S7-1200 Basic Controllers

I/O modules

Fail-safe I/O modules

SM 1226 fail-safe relay output**Overview**

- Relay outputs as a supplement to the integral I/O of the CPUs
- Integrated into the overall automation for the implementation of safety-related requirements
- With integrated safety functions
- Communication with fail-safe CPUs via PROFIsafe mechanisms
- For flexible adaptation of the controller to the corresponding task
- For subsequent expansion of the system with additional outputs
- Operable exclusively in the central system

Ordering data**Article No.****SM 1226 fail-safe relay output signal module****6ES7226-6RA32-0XB0**

2 relay outputs

Accessories**Terminal block (spare part)**

With 11 screws, tin-coated, coded; 4 units

6ES7292-1AL40-0XA0**Front flap set (spare part)**

For modules with a width of 70 mm

6ES7291-1BB30-0XA0**STEP 7 Safety Advanced V17****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 I/O ET 200SP, ET 200MP, ET 200S, ET 200M, ET 200iSP, ET 200pro and ET 200eco

Requirement:

STEP 7 Professional V17

Note:

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6ES7833-1FA17-0YA5

Floating license for 1 user; license key for download¹⁾; email address required for delivery

6ES7833-1FA17-0YH5**STEP 7 Safety Basic V17****Task:**

Engineering tool for configuring fail-safe user programs for SIMATIC S7-1200 FC

Requirement:

STEP 7 Basic V17 and higher

Note:

As of TIA Portal V16, the SIMATIC STEP 7 Safety software is an integral component of the SIMATIC STEP 7 product setup. The functionality of SIMATIC STEP 7 Safety is activated by means of the license key supplied in each case.

Floating license for 1 user; license key on USB flash drive

6ES7833-1FB17-0YA5

Floating license for 1 user; license key for download¹⁾; email address required for delivery

6ES7833-1FB17-0YH5

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

Technical specifications

Article number	6ES7226-6RA32-0XB0 Digital Output SM 1226, F-DQ 2x Relay
General information	
Product type designation	SM 1226, F-DQ 2x relay/5 A
Input current	
from backplane bus 5 V DC, max.	120 mA
Digital outputs	
• from load voltage L+, max.	300 mA
Digital outputs	
Number of digital outputs	2
Short-circuit protection	No
Output voltage	
• Rated value (DC)	5 V DC to 30 V DC
• Rated value (AC)	5 V AC to 250 V AC
Relay outputs	
• Number of relay outputs	2; 2 circuits per output
Switching capacity of contacts	
- with inductive load, max.	0.1 Hz, accordance with IEC 60947-5-1, DC-13; 2 Hz, accordance with IEC 60947-5-1, AC-15
- with resistive load, max.	2 Hz
Interrupts/diagnostics/ status information	
Diagnostics indication LED	
• for status of the outputs	Yes
Degree and class of protection	
IP degree of protection	IP20

Article number	6ES7226-6RA32-0XB0 Digital Output SM 1226, F-DQ 2x Relay
Standards, approvals, certificates	
CE mark	Yes
cULus	Yes
FM approval	Yes
Highest safety class achievable in safety mode	
• Performance level according to ISO 13849-1	Category 4, PL e
• SIL acc. to IEC 61508	SIL 3
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	55 °C
Mechanics/material	
Enclosure material (front)	
• Plastic	Yes
Dimensions	
Width	70 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	300 g