MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Selected official pages for procurement and maintenance review

PRODUCT BRAND

Siemens

PRODUCT MODEL

6ES7223-0BD30-0XB0

SIMATIC S7-1200. SB 1223 digital input/output signal board.

OFFICIAL SOURCE

S7-1200 Programmable Controller System Manual | A5E02486680-AP

V4.6, 11/2022 | Original printed pages: 2, 1281-1283

Open the original manufacturer document

Exact SB 1223 specification and wiring tables plus legal/safety context. Consult the complete system manual for installation. Adjacent variants on original pages are not specifications of this product; identify order code 6ES7223-0BD30-0XB0 before using a table.

AMIKON PRODUCT SUPPORT

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Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠ DANGER

indicates that death or severe personal injury **will** result if proper precautions are not taken.

⚠ WARNING

indicates that death or severe personal injury **may** result if proper precautions are not taken.

⚠ CAUTION

indicates that minor personal injury can result if proper precautions are not taken.

NOTICE

indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

⚠ WARNING

Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Ⓟ 10/2022 Subject to change

Table A-204 Connector pin locations for SB 1223 DI 2 x 5 V DC / DQ 2 x 5 V DC, 200 kHz (6ES7223-3AD30-0XB0)

Pin	X19
1	L+ / 5 V DC
2	M / 5 V DC
3	DI e.0
4	DI e.1
5	DQ e.0
6	DQ e.1

A.13.4 SB 1223 2 X 24 V DC input / 2 X 24 V DC output specifications

Table A-205 General specifications

Technical Data	SB 1223 DI 2 x 24 V DC, DQ 2 x 24 V DC
Article number	6ES7223-0BD30-0XB0
Dimensions W x H x D (mm)	38 x 62 x 21
Weight	40 grams
Power dissipation	1.0 W
Current consumption (SM Bus)	50 mA
Current consumption (24 V DC)	4 mA / Input used

Table A-206 Digital inputs

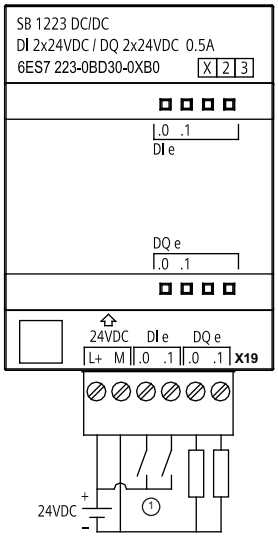
Technical Data		SB 1223 DI 2 x 24 V DC, DQ 2 x 24 V DC
Number of inputs		2
Type		IEC Type 1 sink
Rated voltage		24 V DC at 4 mA, nominal
Continuous permissible voltage		30 V DC, max.
Surge voltage		35 V DC for 0.5 sec.
Logic 1 signal (min.)		15 V DC at 2.5 mA
Logic 0 signal (max.)		5 V DC at 1 mA
HSC clock input rates (max.)		Single phase: 30 kHz (15 to 26 V DC) Quadrature phase: 20 kHz (15 to 26 V DC)
Isolation (field side to logic)		707 V DC (type test)
Isolation groups		1
Filter times	us settings	0.1, 0.2, 0.4, 0.8, 1.6, 3.2, 6.4,10.0, 12.8, 20.0
	ms settings	0.05, 0.1, 0.2, 0.4, 0.8, 1.6, 3.2, 6.4, 10.0, 12.8, 20.0
Number of inputs on simultaneously		2
Cable length (meters)		500 shielded, 300 unshielded

Table A-207 Digital outputs

Technical Data	**SB 1223 DI 2 x 24 V DC, DQ 2 x 24 V DC**
Number of outputs	2
Output type	Solid state - MOSFET (sourcing)
Voltage range	20.4 to 28.8 V DC
Logic 1 signal at max. current	20 V DC min.
Logic 0 signal with 10K Ω load	0.1 V DC max.
Current (max.)	0.5 A
Lamp load	5 W
On state contact resistance	0.6 Ω max.
Leakage current per point	10 µA max.
Pulse Train Output (PTO) rate	20 kHz max., 2 Hz min.[1]
Surge current	5 A for 100 ms max.
Overload protection	No
Isolation (field side to logic)	707 V DC (type test)
Isolation groups	1
Currents per common	1 A
Inductive clamp voltage	L+ minus 48 V, 1 W dissipation
Switching delay	2 µs max. off to on 10 µs max. on to off
Behavior on RUN to STOP	Last value or substitute value (default value 0)
Control of a digital input	Yes
Parallel outputs for redundant load control	No
Parallel outputs for increased load	No
Number of outputs on simultaneously	2
Cable length (meters)	500 m shielded, 150 m unshielded

[1] Depending on your pulse receiver and cable, an additional load resistor (at least 10% of rated current) may improve pulse signal quality and noise immunity.

Table A-208 Wiring diagram for the digital input/output SB

SB 1223 DI 2 x 24 V DC, DQ 2 x 24 V DC (6ES7223-0BD30-0XB0)	
	

① Supports sinking inputs only

Table A-209 Connector pin locations for SB 1223 DI 2 x 24 V DC, DQ 2 x 24 V DC (6ES7223-0BD30-0XB0)

Pin	X19
1	L+ / 24 V DC
2	M / 24 V DC
3	DI e.0
4	DI e.1
5	DQ e.0
6	DQ e.1

A.14 Analog signal boards (SBs)

A.14.1 SB 1231 1 analog input specifications

Note

To use this SB, your CPU firmware must be V2.0 or higher.