

SIMATIC S7-1200

Installation Instructions

6ES7221-3BD30-0XB0

SB 1221 4DI 200 kHz Signal Board

INPUTS	VOLTAGE	HSC	WEIGHT
4 source	24 V DC	200 kHz	35 g

01 PRODUCT VERIFICATION

Article number	6ES7221-3BD30-0XB0
Product	SB 1221 4DI 200 kHz Signal Board
Family	SIMATIC S7-1200
Product type	SB 1221 digital input board
Digital inputs	4
Input type	Current-sourcing
Rated input	24 V DC at 7 mA nominal
Continuous input voltage	28.8 V DC

02 BEFORE INSTALLATION

- Power down the S7-1200 CPU and field circuit before fitting or removing the signal board.
- Open the CPU signal-board cover and install the SB 1221 only in the designated board position.

OFFICIAL INSTALLATION DRAWING

The selected Siemens source page is retained as the installation and wiring reference. Use the current controlled manual for final work.

Technical specifications

A.13 Digital signal boards (SBs)

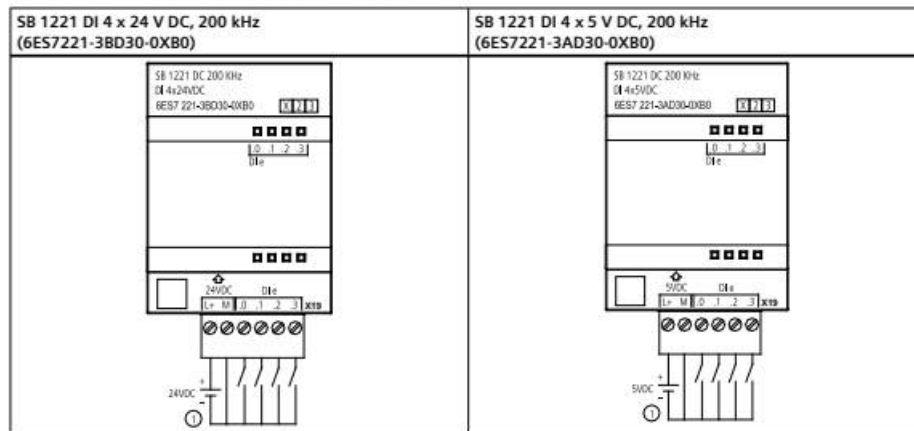
Technical data		SB 1221 DI 4 x 24 V DC, 200 kHz	SB 1221 DI 4 x 5 V DC, 200 kHz
Filter times	us settings	0.1, 0.2, 0.4, 0.8, 1.6, 3.2, 6.4, 10.0, 12.8, 20.0	
	ms settings	0.05, 0.1, 0.2, 0.4, 0.8, 1.6, 3.2, 6.4, 10.0, 12.8, 20.0	
Number of inputs on simultaneously		2 (no adjacent points) at 60 °C horizontal or 50 °C vertical 4 at 55 °C horizontal or 45 °C vertical	4
Cable length (meters)		50 shielded twisted pair	

Note

When switching frequencies above 20 kHz, it is important that the digital inputs receive a square wave. Consider the following options to improve the signal quality to the inputs:

- Minimize the cable length
- Change a driver from a sink only driver to a sinking and sourcing driver
- Change to a higher quality cable
- Reduce the circuit/components from 24 V to 5 V
- Add an external load at the input

Table A-191 Wiring diagrams for the 200 kHz digital input SBs



① Supports sourcing inputs only

Table A-192 Connector pin locations for SB 1221 DI 4 x 24 V DC, 200 kHz (6ES7221-3BD30-0XB0)

Pin	X19
1	L+ / 24 V DC
2	M / 24 V DC

04 INSTALLATION SEQUENCE

01

Power down the S7-1200 CPU and field circuit before fitting or removing the signal board.

02

Open the CPU signal-board cover and install the SB 1221 only in the designated board position.

03

Wire X19 according to the Siemens sourcing-input diagram and maintain the specified 24 V DC polarity.

04

Configure input filtering and high-speed counting in the engineering project before applying the machine signal.

05 OFFICIAL DOCUMENTATION

S7-1200 Programmable Controller System Manual (A5E02486680-AP)

[Open current Siemens manual](#)

[Open Siemens exact product record](#)

06 SUPPORT CONTACT

AMIKON PRODUCT SUPPORT

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