APTER POWER PRODUCT MANUAL

# 6ES7221-3BD30-0XB0

SIMATIC S7-1200 SB 1221 Digital Input Board

The Siemens 6ES7221-3BD30-0XB0 is a SIMATIC S7-1200 SB 1221 signal board with four 24 V DC sourcing digital inputs rated for input frequencies up to 200 kHz.

It reads four high-speed sourcing input signals directly at a compatible S7-1200 CPU and transfers their states or pulse transitions to the user program. It is paired with suitable 24 V DC sensors, CPU signal-board support, TIA Portal configuration, and high-speed wiring for counters, encoders, proximity switches, and machine events.

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|---|---|
| Manufacturer | Siemens |
| Prepared by | Apter Power |
| Document ID | AP-SIE-05-6ES7221-3BD30-0XB0-PM-R1 |
| Revision | R1 |
| Issue date | 2026-08-17 |

# 1. Product Overview and Identity

The Siemens 6ES7221-3BD30-0XB0 is a SIMATIC S7-1200 SB 1221 signal board with four 24 V DC sourcing digital inputs rated for input frequencies up to 200 kHz.

It reads four high-speed sourcing input signals directly at a compatible S7-1200 CPU and transfers their states or pulse transitions to the user program. It is paired with suitable 24 V DC sensors, CPU signal-board support, TIA Portal configuration, and high-speed wiring for counters, encoders, proximity switches, and machine events.

## Model Configuration

| Field | Verified information |
| --- | --- |
| Complete model | 6ES7221-3BD30-0XB0 |
| Manufacturer | Siemens |
| Product description | SIMATIC S7-1200 SB 1221 Digital Input Board |

## Key Features

- Exact Siemens MLFB 6ES7221-3BD30-0XB0
- SIMATIC S7-1200 SB 1221 Digital Input Board
- 4
- 24 V DC
- Model-specific lifecycle, weight, dimensions, and installation guidance

# 2. Technical Specifications

Only manufacturer-confirmed information is stated. Values absent from the named Siemens source are marked for nameplate or document verification.

| Parameter | Verified value |
| --- | --- |
| Product type | S7-1200 SB 1221 digital input signal board |
| Digital inputs | 4 |
| Input voltage | 24 V DC |
| Input circuit | Sourcing input |
| Maximum published input frequency | 200 kHz |
| Siemens net weight | 0.030 kg |
| Siemens packaging dimensions | 5.0 x 8.0 x 2.9 cm |
| Country of origin | China |
| Lifecycle | PM300 active product; phase-out scheduled from 1 November 2026 |

## Verification Note

Use the complete 6ES7221-3BD30-0XB0 identifier. Siemens lists 6ES7221-3BD30-0XB0 as PM300 active, with product phase-out scheduled from 1 November 2026. Values not published in the cited Siemens source are intentionally not inferred.

# 3. Functions, Applications and Components

## Core Functions

- It reads four high-speed sourcing input signals directly at a compatible S7-1200 CPU and transfers their states or pulse transitions to the user program. It is paired with suitable 24 V DC sensors, CPU signal-board support, TIA Portal configuration, and high-speed wiring for counters, encoders, proximity switches, and machine events.
- Maintains the documented SIMATIC S7-1200 signal-board expansion role for this complete Siemens article number.
- Provides a verified reference for configuration, commissioning, diagnostics, and lifecycle planning.

## Application Areas

| Application | System role |
| --- | --- |
| High-speed pulse capture | Reads encoder or sensor transitions up to the published frequency |
| Machine event detection | Adds four fast 24 V input points without a separate signal module |
| Counting and positioning | Supplies pulse trains to configured S7-1200 counter functions |
| Compact equipment control | Expands a supported CPU within its signal-board footprint |

## Compatible Components

- SIMATIC S7-1200 CPU that supports the SB 1221 signal board
- 24 V DC sourcing sensors or pulse sources matching the Siemens input circuit
- TIA Portal hardware configuration and high-speed counter assignment for the CPU
- Short, shielded, and grounded high-speed signal wiring where required by Siemens

## Lifecycle Status

Siemens lists 6ES7221-3BD30-0XB0 as PM300 active, with product phase-out scheduled from 1 November 2026.

# 4. Installation Precautions

- CPU support: Confirm the exact S7-1200 CPU hardware and signal-board slot compatibility
- Input type: Use only the documented 24 V DC sourcing circuit and observe terminal polarity
- High-speed wiring: Control cable length, shielding, grounding, noise, and edge quality
- TIA Portal: Assign channels, filters, counters, and interrupt behavior in the approved project
- Commissioning: Test each input at operating speed and confirm no false counts or missed pulses

| STOP - Verify before installation |
| --- |
| Use the complete 6ES7221-3BD30-0XB0 identifier. Siemens lists 6ES7221-3BD30-0XB0 as PM300 active, with product phase-out scheduled from 1 November 2026. Values not published in the cited Siemens source are intentionally not inferred. |
| Use the physical nameplate and current Siemens documents as the controlling records. |

# 5. Official Source and Use Notice

## Official source

Siemens Industry Mall product record for 6ES7221-3BD30-0XB0:
https://mall.industry.siemens.com/mall/en/oeii/Catalog/Product?SiepCountryCode=OE&mlfb=6ES7221-3BD30-0XB0

## Apter Power product page

https://www.apterpower.com/Siemens/6es7221-3bd30-0xb0

## Use Notice

This is an original Apter Power product-specific reference prepared from the Siemens source named above. It is not a Siemens publication and does not replace the original data sheet, nameplate, certificate, installation drawing, safety instructions, or machine-builder documentation.

## ASK FOR QUOTE

For availability and quotation details, visit www.apterpower.com or contact sales13@apterpower.com.