

6ES7231-4HF32-0XB0

SIMATIC S7-1200 SM 1231 Analog Input Module

Siemens 6ES7231-4HF32-0XB0 is a SIMATIC S7-1200 SM 1231 analog input module with eight differential current or voltage inputs. It supports $\pm 10\text{ V}$, $\pm 5\text{ V}$, $\pm 2.5\text{ V}$, $0\text{--}20\text{ mA}$ and $4\text{--}20\text{ mA}$ ranges with 12-bit-plus-sign or 13-bit ADC conversion.

BRAND	Siemens	FAMILY	Siemens SIMATIC S7-1200
PART	6ES7231-4HF32-0XB0	SYSTEM ROLE	Provides eight differential analog input channels

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6ES7231-4HF32-0XB0

MANUFACTURER SOURCE RECORD

Data sheet 6ES7231-4HF32-0XB0
Siemens SIMATIC S7-1200 product data sheet, 2026-02-13

Product Overview

SYSTEM FUNCTION

Siemens 6ES7231-4HF32-0XB0 is a SIMATIC S7-1200 SM 1231 analog input module with eight differential current or voltage inputs. It supports $\pm 10\text{ V}$, $\pm 5\text{ V}$, $\pm 2.5\text{ V}$, $0\text{--}20\text{ mA}$ and $4\text{--}20\text{ mA}$ ranges with 12-bit-plus-sign or 13-bit ADC conversion.

FUNCTION 1

Provides eight differential analog input channels

FUNCTION 2

Accepts voltage ranges up to $\pm 10\text{ V}$

FUNCTION 3

Accepts $0\text{--}20\text{ mA}$ and $4\text{--}20\text{ mA}$ current inputs

FUNCTION 4

Uses 12-bit-plus-sign / 13-bit ADC conversion

System Components

COMPONENT	DOCUMENTED ROLE
Host / carrier	Siemens SIMATIC S7-1200
Primary interface	Provides eight differential analog input channels
Engineering context	The SM 1231 module is installed in an S7-1200 rack with its documented sensor wiring and TIA Portal configuration. Commissioning verifies the slot identity, range selection, 24 V supply, analog commons and individual input response.
Commissioning duty	Apply controlled voltage and current signals to verify all eight inputs before release.

TECHNICAL NOTE

Install 6ES7231-4HF32-0XB0 in the documented S7-1200 station and record the slot, wiring, sensor ranges and channel diagnostics before removal. Restore the approved TIA Portal hardware configuration, protect the analog commons and verify all eight channels with controlled voltage or current inputs.

Technical Data

PARAMETER	VALUE	PARAMETER	VALUE
Country of origin	Germany	Voltage ranges	±10 V, ±5 V, ±2.5 V
HS code	8537101190	Current ranges	0–20 mA, 4–20 mA
Siemens article number	6ES7231-4HF32-0XB0	Resolution	12 bit + sign / 13 bit ADC
Product type	SM 1231 analog input	Rated supply	24 V DC
Analog inputs	8 differential current or voltage inputs	Typical current consumption	60 mA

Related Products on Apter Power

MODEL	SYSTEM ROLE	APTER POWER PAGE
Siemens	6SL3200-0SP01-0AA0 CIM PM-IF assembly	View Siemens page
Siemens	6SE7041-8HK85-1HA0 PER2 interface	View Siemens page
Siemens	6RA8075-6DS22-0AA0 SINAMICS DC converter	View Siemens page
Siemens	6ES7314-6BH04-0AB0 S7-300 CPU	View Siemens page
Siemens	6ES7223-1BL22-0XA0 S7-200 I/O module	View Siemens page
Siemens	6AU1455-2AD00-0AA0 SIMOTION controller	View Siemens page
Siemens	6SL3120-2TE21-0AA4 SINAMICS Motor Module	View Siemens page
Siemens	6SL3320-1TE33-1AA3 SINAMICS Motor Module	View Siemens page

ENGINEERING BOUNDARY

Confirm 6ES7231-4HF32-0XB0, Siemens SIMATIC S7-1200 host, slot, SM 1231 channel map, voltage/current ranges, 24 V supply, analog commons, shields, TIA Portal configuration and controlled eight-channel test results before commissioning.

Applications and Precautions

Common Applications

S7-1200 process measurement

Acquires documented voltage or current signals for a SIMATIC control program.

Transmitter loop monitoring

Reads 0–20 mA or 4–20 mA sensors with the configured channel range.

Machine analog feedback

Captures differential voltage feedback for closed-loop machine functions.

I/O station commissioning

Supports channel-by-channel scaling, diagnostics and controlled signal tests.

Product Precautions

- 1

Confirm 6ES7231-4HF32-0XB0 and SM 1231 on the module marking.
- 2

Place the S7-1200 controller and process in the approved maintenance state.
- 3

Isolate the 24 V supply and all external analog sensor loops.
- 4

Record the slot, eight channel assignments, sensor ranges, commons and shield terminations.
- 5

Use ESD controls and inspect the front connector, keying and terminal condition.
- 6

Restore the documented TIA Portal hardware configuration and scaling.
- 7

Review module and channel diagnostics after controlled energization.
- 8

Apply controlled voltage and current signals to verify all eight inputs before release.

IMPORTANT NOTICE

Confirm 6ES7231-4HF32-0XB0, Siemens SIMATIC S7-1200 host, slot, SM 1231 channel map, voltage/current ranges, 24 V supply, analog commons, shields, TIA Portal configuration and controlled eight-channel test results before commissioning.

ACCEPTANCE CHECK	REQUIRED EVIDENCE
Identity	6ES7231-4HF32-0XB0
Configuration	Review module and channel diagnostics after controlled energization.
Functional release	Apply controlled voltage and current signals to verify all eight inputs before release.

Engineer FAQ

Q1 What identity details must be checked before 6ES7231-4HF32-0XB0 is removed?

Confirm 6ES7231-4HF32-0XB0, Siemens SIMATIC S7-1200 host, slot, SM 1231 channel map, voltage/current ranges, 24 V supply, analog commons, shields, TIA Portal configuration and controlled eight-channel test results before commissioning.

Q3 Which Siemens SIMATIC S7-1200 interfaces must be recorded for 6ES7231-4HF32-0XB0?

The SM 1231 module is installed in an S7-1200 rack with its documented sensor wiring and TIA Portal configuration. Commissioning verifies the slot identity, range selection, 24 V supply, analog commons and individual input response.

Q5 How should the installed configuration be restored after fitting 6ES7231-4HF32-0XB0?

Restore the documented TIA Portal hardware configuration and scaling.

Q7 What replacement records should be retained for 6ES7231-4HF32-0XB0?

Confirm 6ES7231-4HF32-0XB0 and SM 1231 on the module marking. Use ESD controls and inspect the front connector, keying and terminal condition.

Q2 How does 6ES7231-4HF32-0XB0 perform its documented simatic s7-1200 sm 1231 analog input module role?

Provides eight differential analog input channels. It supports ± 10 V, ± 5 V, ± 2.5 V, 0–20 mA and 4–20 mA ranges with 12-bit-plus-sign or 13-bit ADC conversion.

Q4 What isolation and ESD controls apply while handling 6ES7231-4HF32-0XB0?

Place the S7-1200 controller and process in the approved maintenance state. Isolate the 24 V supply and all external analog sensor loops.

Q6 Which diagnostic evidence confirms that 6ES7231-4HF32-0XB0 is recognized correctly?

Review module and channel diagnostics after controlled energization.

Q8 What final acceptance test is required before 6ES7231-4HF32-0XB0 returns to service?

Apply controlled voltage and current signals to verify all eight inputs before release.

MANUFACTURER SOURCE RECORD

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