Siemens 6ES5470-4UB12

01 Isolated Analog Voltage Output Module / system role

Product function and operating context

Siemens 6ES5470-4UB12 translates the S5 program’s analog commands into continuously variable actuator references, with load impedance and reference wiring controlling the delivered signal quality.

The -4UB12 voltage-output execution must be distinguished from the current-output versions in the same module family. Connect only compatible voltage-input loads and retain the installed channel addressing.

Integration checkpoints

- Bipolar drive reference
- Continuous actuator positioning
- S5 analog-output restoration
- Loop acceptance testing

Command path	Bipolar voltage references for compatible actuators
Wiring discipline	Preserve output and remote-reference connections
Acceptance focus	Check polarity, zero command and both signal directions

The receiving input and cable capacitance form part of the output load. Check the minimum load resistance and permissible voltage drop, and use the specified reference or sense wiring so that the actuator receives the intended command.

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02 Technical operating envelope

Analog output channels	8
Output range	±10 V
Digital representation	12-bit two’s complement
Nominal command scale	±1024 units
Minimum voltage-load resistance	3.3 kΩ

Maximum voltage-output current	3 mA
Maximum capacitive load	100 nF including cable
Backplane current	Approximately 250 mA at 5 V
Permissible common-mode potential	60 V AC / 75 V DC maximum

Ratings apply to the stated hardware execution and operating conditions; companion hardware and configured functions require separate compatibility checks.

Load impedance

An excessively low receiving impedance can prevent the specified command voltage from reaching the load. Evaluate both the actuator input and any parallel test equipment.

Voltage drop

Assess lead resistance and reference wiring at the receiving device. A correct measurement at the module does not by itself prove the voltage delivered to the actuator.

Command representation

Confirm the signed digital representation and zero-state behavior before enabling motion. Validate positive and negative commands with the actuator secured.

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03 System integration and applications

Bipolar drive reference

Provide a signed voltage command to a compatible drive input.

Continuous actuator positioning

Control equipment accepting a proportional voltage reference.

S5 analog-output restoration

Retain the existing channel and enable configuration.

Loop acceptance testing

Compare commanded values with voltage at the receiving terminals.

Application and compatibility boundary

The output values use two’s-complement representation. Before releasing a drive or positioning actuator, verify the zero command, positive and negative response and the defined behavior when enable or controller operation is interrupted.

Available unit verification

Check the exact UB12 marking, address switch, enable arrangement and front-connector reference wiring. Confirm analog output module and front connector as quoted in the quotation. Evaluate the actual interfaces and included accessories against the installed arrangement.

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04 Engineering selection decisions

Can the voltage-output execution of 6ES5470-4UB12 be wired as a 4–20 mA transmitter?

No. The UB12 execution is a bipolar voltage-output module. A current-input receiver requires a compatible interface or the correct current-output hardware.

Why can the voltage measured at 6ES5470-4UB12 differ from that at the actuator?

Cable resistance, load current and reference wiring can cause a voltage drop. Check the command at the receiving terminals as well as at the module.

What happens if a low-impedance meter or load is connected to 6ES5470-4UB12?

It can overload the voltage output and distort the command. Check the combined load impedance, including temporary test equipment.

How should the negative command range of 6ES5470-4UB12 be verified safely?

Secure the actuator, apply controlled signed test values and confirm the resulting polarity at the receiving input before enabling motion.

Why must the command word sent to 6ES5470-4UB12 be checked after a software conversion?

A changed numerical representation or scale can reverse or saturate the analog command. Validate zero and both polarities against known engineering values.

Can unused sense or reference terminals on 6ES5470-4UB12 simply be left open?

Use the connection arrangement specified for the installed output circuit. An omitted reference or sense connection can invalidate the voltage delivered to the load.

What should be checked if 6ES5470-4UB12 has stable output at rest but oscillates with a long cable?

Evaluate cable capacitance, receiving impedance, screening and the actuator input dynamics before altering the control-loop tuning.

Which interruption tests matter for an actuator commanded by 6ES5470-4UB12?

Verify the approved response to enable loss and controller stop, ensuring the receiving equipment reaches its intended safe condition without an unexpected residual command.

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05 Configuration boundary and references

Lifecycle and support

The current manufacturing and manufacturer-support stage for this exact model is not confirmed.

Replacement assessment

Preserve the -4UB12 voltage-output execution, address, enable setting and actuator command polarity. Current-output versions require a different circuit assessment.

Available unit details

Offered reference: Siemens 6ES5470-4UB12. Condition: New, original product. Check the exact UB12 marking, address switch, enable arrangement and front-connector reference wiring. Confirm analog output module and front connector as quoted in the quotation; companion equipment is included only when itemized.

Document roles: The original excerpt retains manufacturer tables and drawings; this brief addresses selection and system context; the separate installation guide covers field procedures and acceptance.

Technical basis: SIMATIC S5 Analog Modules, C79000-B8576-C300-06.

Related product navigation

- Siemens 6ES7214-1BD23-0XB0
- Siemens 6ES7317-2EK14-0AB0
- Siemens 6ES7321-1BH02-0AA0

Related products for separate application assessment; verify the platform and interface. No interchangeability is implied.

Product enquiries