Siemens 6ES5460-4UA11

01 Isolated Analog Input Module / system role

Product function and operating context

Siemens 6ES5460-4UA11 provides a configurable interface between field transducers and the S5 program, with independent attention required for range selection, digital representation and sensor reference potentials.

Each range submodule serves four inputs. The module-wide mode and the installed divider, shunt or continuity submodule together determine the usable signal range; changing only the software scale does not change the hardware input circuit.

Integration checkpoints

- Process-transducer acquisition
- Resistance temperature measurement
- Low-level voltage sensing
- Analog-loop restoration

Range organization	Two four-channel plug-in range submodules
Signal processing	Selectable mains-frequency integration
Data interpretation	Preserve sign format and sensor scaling

Input channels are isolated from the reference potential and from one another, except in the Pt100 arrangement. Two-wire transducer connections also require attention to their common reference and can remove the isolation otherwise available between channels.

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02 Technical operating envelope

Analog inputs	8
Range-module grouping	4 channels per submodule
Digital representation	13-bit two’s complement or 12 bits plus sign
Conversion method	Integrating dual slope
Integration at 50 / 60 Hz	20 ms / 16⅔ ms

Coding time at 50 / 60 Hz	60 ms / 50 ms per value
Eight-channel cycle at 50 Hz	Approximately 0.48 s
Permissible common-mode potential	60 V AC / 75 V DC maximum
Low-level range	±50 mV

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

Range hardware

Two four-channel submodules define the electrical input circuits. Verify their part numbers and mode compatibility before connecting a current loop or voltage source.

Sensor-reference boundary

The Pt100 wiring arrangement does not retain isolation between individual inputs. Assess common references and the permitted common-mode voltage for the actual sensor circuit.

Sampling and diagnostics

The integrating converter rejects interference in relation to the selected mains frequency. Account for the full channel scan when evaluating a fast-changing process signal.

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03 System integration and applications

Process-transducer acquisition

Convert the supported current or voltage range to the S5 input word.

Resistance temperature measurement

Use the specified Pt100 excitation and reference wiring.

Low-level voltage sensing

Match gain, compensation and input submodule to the sensor signal.

Analog-loop restoration

Retain hardware range and numerical representation during replacement.

Application and compatibility boundary

The integration setting must suit the mains frequency, and the program must decode the chosen signed-number representation. Validate the complete sensor-to-program path using an appropriate signal source, including the configured overflow and open-circuit response.

Available unit verification

Check both range submodules, both mode-switch blocks and the sensor-front-connector arrangement. Confirm input module, range submodules and front connector as individually itemized in the quotation. Evaluate the actual interfaces and included accessories against the installed arrangement.

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04 Engineering selection decisions

Why can 6ES5460-4UA11 show a plausible value with the wrong range submodule installed?

A wrong divider or shunt can still produce a stable digital result. Check the physical submodule and inject known signal points before accepting the program scaling.

How does the mains-frequency setting affect measurements with 6ES5460-4UA11?

It determines the integration interval used to reject periodic interference. Select the actual supply-network frequency and investigate noise before modifying software filtering.

Does Pt100 wiring preserve channel-to-channel isolation on 6ES5460-4UA11?

No. The Pt100 arrangement is an exception to the channel-isolation statement, so sensor references must be assessed as a connected measurement circuit.

Why must the S5 program data format match the switch setting on 6ES5460-4UA11?

Two’s complement and absolute value plus sign encode negative values differently. A mismatch can give incorrect sign or magnitude even when the analog signal is correct.

How should unused voltage inputs on 6ES5460-4UA11 be terminated?

Use the termination arrangement specified for the installed divider, shunt or continuity submodule and open-circuit mode. Do not apply one jumper scheme to every range type.

Can a 2-wire transmitter be connected to 6ES5460-4UA11 without reviewing the reference wiring?

No. Its supply and return arrangement changes the reference relationships and may remove isolation between channels and the load supply.

Why does a fast signal step reach different channels of 6ES5460-4UA11 at different times?

The channels are converted sequentially. Evaluate the complete acquisition cycle instead of treating all input words as simultaneous samples.

What should be tested after moving a sensor from one group of 6ES5460-4UA11 to another?

Check the destination range submodule, open-circuit selection, compensation and software scaling, then verify several known input points.

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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

Retain the exact 11 execution, range submodules, mode switches, sensor wiring and program data format; a nearby analog-input code is not sufficient.

Available unit details

Offered reference: Siemens 6ES5460-4UA11. Condition: New, original product. Check both range submodules, both mode-switch blocks and the sensor-front-connector arrangement. Confirm input module, range submodules and front connector as individually itemized 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 6ES7214-1AG40-0XB0
- Siemens 6ES7972-0AA01-0XA0
- Siemens 6ES7221-1BH32-0XB0

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

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