Siemens 6ES7331-7KF02-0AB0

Complete Product Information

Siemens 6ES7331-7KF02-0AB0 is an isolated SM 331 analog input module for S7-300, with eight inputs for voltage, current and temperature-related signals.

Operating context

Eight analog inputs support voltage, current, thermocouple, RTD and resistance measurements; resistance measurement uses four inputs. Supported current ranges include 0-20 mA and 4-20 mA. Thermocouple types E, J, K, L and N and standard Pt100/Ni100 RTDs are supported.

Integration times of 2.5, 16.67, 20 and 100 ms correspond to basic conversion times of 3, 17, 22 and 102 ms. Resolution and interference suppression depend on the selected integration and measurement mode. Preserve the configured range and engineering scaling when replacing the module.

The 20-pin front connector carries the field connections. Inputs are isolated from the backplane and electronics supply, but are not isolated from each other. Diagnostics and limit alarms are parameterizable, and the red SF LED gives a group-error indication. Use the diagnostic record to identify the affected circuit.

Configuration snapshot

Product type	SM 331 analog input
System	SIMATIC S7-300
Analog inputs	8; 4 for resistance measurement
Input types	Voltage, current, thermocouple, RTD and resistance
Resolution	9/12/14 bits; range and integration dependent
Rated load voltage	24 V DC
Load current	30 mA maximum without load

02 Technical configuration and interfaces

Backplane current	50 mA maximum at 5 V DC
Current ranges	0-20 mA, 4-20 mA, ±10 mA, ±20 mA, ±3.2 mA
Thermocouples	Types E, J, K, L and N
RTD types	Pt100 and Ni100
Integration time	2.5 / 16.67 / 20 / 100 ms
Front connector	20-pin
Channel isolation	Channels not isolated from each other
Diagnostics	Parameterizable; red SF group-error LED

System and configuration relationships

System relationship

A mixed-signal S7-300 station can use one SM 331 for several sensor technologies, provided the channel-group settings match the wiring.

Configuration boundary

SF is a group-error indication. Read the parameterizable diagnostic information to identify the affected channel or condition before release.

Offered reference	6ES7331-7KF02-0AB0
Technical scope	Technical values apply to the complete 6ES7331-7KF02-0AB0 execution. Retain the actual installed configuration and applicable Siemens instructions.

03 Applications and precautions

Application context

Process analog acquisition

Use the SM 331 for supported voltage, current and resistance signals in an S7-300 station. Preserve the engineering range assigned to each channel group.

Temperature acquisition

Configure supported thermocouple or RTD inputs for the connected sensor. Coordinate sensor selection, wiring and compensation with the installed measurement arrangement.

Current-loop integration

Integrate supported 0-20 mA or 4-20 mA signals into the station. Preserve loop wiring, input configuration and engineering scaling during a module change.

Analog module service

Use the configured channel and diagnostic records to check a replacement. Compare integration settings and connector wiring before accepting the returned measurements.

Commissioning precautions

Preserve channel allocation

It provides eight analog inputs; four are available for resistance measurement.

Select the thermocouple type

Types E, J, K, L and N are supported. Match the configured sensor and compensation method to the wiring.

Match current-loop settings

Supported current ranges include 4-20 mA and 0-20 mA, with 25 ohm input resistance for these ranges.

Check isolation boundaries

The channels are isolated from the backplane and electronics supply, but not from each other.

Retain integration settings

Selectable integration times are 2.5, 16.67, 20 and 100 ms; basic conversion times are 3, 17, 22 and 102 ms. Resolution and interference suppression depend on the selected mode.

Verify the front connector

A 20-pin front connector is required. Preserve the channel wiring and verify the measurement settings before reconnecting the sensor circuits.

04 Engineering questions

How many input channels does 6ES7331-7KF02-0AB0 provide?

It provides eight analog inputs; four are available for resistance measurement.

Which thermocouple types are supported by 6ES7331-7KF02-0AB0?

Types E, J, K, L and N are supported. Match the configured sensor and compensation method to the wiring.

Can 6ES7331-7KF02-0AB0 measure 4-20 mA signals?

Yes. Supported current ranges include 4-20 mA and 0-20 mA, with 25 ohm input resistance for these ranges.

Are the input channels of 6ES7331-7KF02-0AB0 isolated from one another?

No. The channels are isolated from the backplane and electronics supply, but not from each other.

How does integration time affect 6ES7331-7KF02-0AB0?

Selectable integration times are 2.5, 16.67, 20 and 100 ms; basic conversion times are 3, 17, 22 and 102 ms. Resolution and interference suppression depend on the selected mode.

What front connector is required for 6ES7331-7KF02-0AB0?

A 20-pin front connector is required. Preserve the channel wiring and verify the measurement settings before reconnecting the sensor circuits.

Which RTD inputs can be configured on 6ES7331-7KF02-0AB0?

Standard Pt100 and Ni100 inputs are supported. The module also supports two-, three- and four-wire resistance connections.

What does the red SF indication on 6ES7331-7KF02-0AB0 mean?

SF is a group-error indication. Read the parameterizable diagnostic information to identify the affected channel or condition before release.

05 Lifecycle and offered-unit information

Lifecycle status

6ES7331-7KF02-0AB0: The product is in the manufacturer product-cancellation stage and designated for replacement-part support.

Support and replacement: Confirm current service and replacement guidance with Siemens using the complete marking, hardware revision and installed configuration.

Availability: Apter Power supply availability is confirmed separately from manufacturer lifecycle and support status.

Explore other Siemens references

Portfolio navigation only; no compatibility or substitution is implied.

Siemens 6ES7132-4HB01-0AB0	View product
Siemens 6ES7151-8AB01-0AB0	View product
Siemens 6ES7336-4GE00-0AB0	View product

Available unit details

Offered reference: Siemens 6ES7331-7KF02-0AB0. Condition: New, original product.

Identity check: Technical values apply to the complete 6ES7331-7KF02-0AB0 execution. Retain the actual installed configuration and applicable Siemens instructions.

Included items: Confirm the module, 20-pin front connector and associated field accessories in the quotation.

Technical reference

Siemens 6ES7331-7KF02-0AB0 Data Sheet

Discuss your complete reference

Siemens 6ES7331-7KF02-0AB0

New, original product

sales13@apterpower.com | +86 18030235313