

6ES7331-7PF11-0AB0

Analog Input

PUBLISHED IDENTITY

Siemens 6ES7331-7PF11-0AB0 is an isolated SIMATIC S7-300 SM331 analog input module for eight thermocouple channels. It provides 16-bit conversion with a 50 ms conversion time and uses one 40-pole front connector.

Technical snapshot

SIMATIC module	S7-300 SM331 isolated analog input
Input channels	Eight thermocouple inputs
Supported thermocouples	B, E, J, K, L, N, R, S, T, TXK/TXK(L)
Resolution	16 bit
Conversion time	50 ms
Front connector	One 40-pole connector
Rated supply	24 V DC
Backplane current	100 mA maximum at 5 V

Verified related ApterPower product pages

Siemens 6ES7314-6BH04-0AB0

Siemens 6GK7243-2AX01-0XA0

Engineering data

Official evidence organized for exact-model review

SIMATIC module	S7-300 SM331 isolated analog input
Input channels	Eight thermocouple inputs
Supported thermocouples	B, E, J, K, L, N, R, S, T, TXK/TXK(L)
Resolution	16 bit
Conversion time	50 ms
Front connector	One 40-pole connector
Rated supply	24 V DC

Backplane current	100 mA maximum at 5 V
Typical power loss	3 W
Input isolation	Isolated module; 500 V DC channel-to-backplane test value
Shielded cable length	100 m maximum
Module width	40 mm
Channel diagnostic alarm	Supported
Unsupported measurement modes	Voltage, current, RTD and resistance

EVIDENCE BOUNDARY

Confirm the complete 6ES7331-7PF11-0AB0 order number, thermocouple type, compensation method, wiring and parameter assignment before replacement.

Applications and system role

Four distinct documented operating contexts

S7-300 TEMPERATURE INPUT

Eight-channel thermocouple acquisition in a documented SIMATIC S7-300 station.

PROCESS TEMPERATURE MONITORING

Isolated measurement of approved thermocouple types with channel diagnostic support.

LEGACY SPARE REPLACEMENT

Like-for-like maintenance where 6ES7331-7PF11-0AB0 remains specified as a spare part.

SHIELDED FIELD WIRING

Applications whose thermocouple and compensation conductors follow the approved 100 m shielded-cable limit.

Integration control

The SM331 module accepts the published B, E, J, K, L, N, R, S, T and TXK/TXK(L) thermocouple types and does not provide voltage, current, RTD or resistance modes. It uses 24 V DC rated supply power, draws up to 100 mA from the 5 V backplane and dissipates approximately 3 W. Channel diagnostics, wiring shields and compensation arrangements must match the approved S7-300 design.

Verified related ApterPower product pages

[Siemens 6ES7315-2EG10-0AB0](#)

[Siemens 6ES5928-3UB12](#)

Technical questions

Complete model-specific answers from the approved evidence set

What is Siemens 6ES7331-7PF11-0AB0?

Siemens 6ES7331-7PF11-0AB0 is an isolated S7-300 SM331 analog input module for eight thermocouple channels.

What resolution and conversion time does 6ES7331-7PF11-0AB0 provide?

The 6ES7331-7PF11-0AB0 provides 16-bit conversion with a 50 ms conversion time.

How much backplane current does 6ES7331-7PF11-0AB0 draw?

The 6ES7331-7PF11-0AB0 draws a maximum of 100 mA from the 5 V backplane bus.

What cable limit applies to the thermocouple channels?

Siemens specifies a maximum shielded-cable length of 100 m for the thermocouple channels.

Which thermocouple types can the SM331 module measure?

The SM331 module can measure thermocouple types B, E, J, K, L, N, R, S, T and TXK/TXK(L).

Which connector is required by this S7-300 analog module?

This S7-300 analog module requires one 40-pole front connector.

Can the module accept voltage or RTD signals?

The module cannot accept voltage, current, RTD or resistance inputs because its channels are specified for thermocouples only.

What must be validated after replacing the SM331?

The technician must validate thermocouple type, compensation, channel scaling, diagnostics and stable process values after replacing the SM331.

Product precautions

Eight aligned controls before return to service

1

Record the complete 6ES7331-7PF11-0AB0 order number and rack position.

2

Place the S7-300 station and affected process in the approved safe maintenance state.

3

Back up hardware configuration and record every channel parameter and diagnostic setting.

4

Verify thermocouple type, polarity, compensation method and shield termination.

5

Remove field and backplane power before disconnecting the 40-pole front connector.

6

Do not configure voltage, current, RTD or resistance modes on this thermocouple module.

7

Restore the station and confirm channel values, diagnostics and process scaling.

8

Document the final configuration and functional acceptance results before release.

Verified related ApterPower product pages

Siemens 16249-51-4

Siemens 6AV6647-0AG11-3AX0

Siemens 6ES5470-4UA12

Siemens 6ES5465-4UA12

Evidence and support

Manufacturer references, related products and direct contact

Manufacturer evidence used

- Siemens technical data sheet for 6ES7331-7PF11-0AB0.
- Siemens ET 200M migration comparison for SM331 thermocouple modules.

Verified related ApterPower product pages

Siemens 39RTMCAN

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