

Siemens 6ES7331-7PF01-0AB0 Manual

Brand	Siemens
Product Series	Siemens
Product Type	Isolated Analog Input Module for S7-300 PLC

Description

The Siemens 6ES7331-7PF01-0AB0 is an isolated analog input module specifically designed for use with S7-300 PLC systems. This module can accommodate eight input channels tailored for resistance and RTD measurements, offering compatibility with various sensor types, including resistance thermometers and resistors.

Technical specifications for 6ES7331-7PF01-0AB0

Manufacturer Siemens

Product Type Isolated Analog Input Module for S7-300 PLC

Product Line I/O Modules

Part Number 6ES7331-7PF01-0AB0

UPC 662643177916

Weight 0.38 lbs (0.17 kg)

Input Channels 8 channels dedicated to resistance and RTD measurements

Supported Sensor Types Resistance thermometers (Pt, Ni, Cu) and resistors (0-150/300/600 Ω)

Isolation Voltage 500 V DC tested between channels and backplane/power supply

Resolution 16-bit two's complement with overrange capability

Conversion Time Configurable: 10 ms (≤ 4 ch), 80 ms (8 ch), 190 ms (> 5 ch) per module cycle

Interference Suppression 50 Hz, 60 Hz, and 400 Hz noise rejection

Cable Requirements Shielded cables up to 200 m maximum length

Wiring Configurations 2-wire, 3-wire, or 4-wire connection for resistance measurement

Operational Accuracy (Full Range) $\pm 0.1\%$ for resistors; ± 1 K for RTDs

Basic Accuracy (at 25°C) $\pm 0.05\%$ for resistors; ± 0.5 K for RTDs

Diagnostic Features Configurable alarms (limit, diagnostic, hardware interrupt) per channel

Channel Grouping 2-channel groups with internal isolation

Power Consumption 24 V DC supply; 240 mA max from L+, 100 mA from backplane

Physical Dimensions (W x H x D) 40 mm x 125 mm x 120 mm

Description

The Siemens 6ES7331-7PF01-0AB0 module functions as an isolated analog input interface intended for S7-300 PLC systems. It offers the capability of measuring eight different inputs geared towards resistance and RTD sensors. Capable of interfacing with resistance thermometers constructed from various materials such as Platinum, Nickel, and Copper, as well as resistors that operate within the range of 0 to 600 Ω , this module is adaptable for various applications.

A key specification includes an isolation voltage strength of 500 V DC, which has been verified between the inputs and the backplane or power supply for safety. With a resolution of 16-bit in two's complement format, the data conversion further boasts a configurable processing time, allowing users to optimize performance based on the desired number of channels active during operation.

For managing noise interference, the module provides suppression capabilities for commonly encountered frequencies, namely 50 Hz, 60 Hz, and 400 Hz. Regarding wiring flexibility, the device supports multiple configurations for resistance measurement, permitting 2-wire, 3-wire, or 4-wire connections depending on the application.

In terms of performance metrics, the device achieves an operational accuracy of $\pm 0.1\%$ for resistors and $\pm 1\text{ K}$ for RTDs. Basic accuracy at an ambient temperature of 25°C is rated at $\pm 0.05\%$ for resistors and $\pm 0.5\text{ K}$ for RTDs. The module also incorporates diagnostic functionalities with configurable alarms on each channel, monitoring for limits, connectivity disturbances, and hardware interruptions.

Power requirements include a 24 V DC supply where it draws a maximum of 240 mA from L+ and 100 mA from the backplane. Physically, its dimensions measure 40 mm in width, 125 mm in height, and 120 mm in depth, making it suitable for installation in various panel configurations.

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