Siemens 6ES7131-4BF00-0AA0

01 Eight-Channel Digital Input Module

Siemens 6ES7131-4BF00-0AA0 provides compact binary acquisition with per-channel indication. Correct terminal order, sensor leakage and input filtering matter when the module is used for machine-state or interlock feedback.

1. Field contacts / sensors
2. Terminal assignment
3. Input filter + byte
4. PLC interlock logic

Physical and functional arrangement

The physical terminal sequence is interleaved rather than a simple top-to-bottom channel count. Trace field conductors to the actual channel assignment and verify the controller bit mapping. A correct LED on the wrong channel can still produce an incorrect application state.

Signal path and configuration

Two-wire sensors need a suitable supply distribution arrangement and acceptable off-state leakage. Additional terminals may be needed at the selected base. Review both the active signal voltage and the inactive state before accepting a sensor circuit.

Application boundary

Input delay filters short disturbances and affects detection of fast events. Use the module within its intended digital-state application, and verify the complete input-to-program response. Individual LEDs support troubleshooting but this execution does not provide module diagnostic functions.

Ratings apply to the stated hardware execution and operating conditions. Installed firmware, companion modules and configured functions must match the application.

Siemens 6ES7131-4BF00-0AA0

02 Technical data and engineering limits

Digital inputs	8
Rated supply	24 V DC
Input address space	1 byte
Parameter length	3 bytes
Logic 1 range	15–30 V
Logic 0 range	-30 to +5 V
Input current at logic 1	5 mA typical
Input delay	3 ms typical; 2–4.5 ms
Two-wire sensor leakage	1.5 mA maximum
Cable length, unshielded	600 m maximum
Cable length, shielded	1000 m maximum
Isochronous operation	Supported

Additional interface data

Terminal 1 / 5	DI0 / DI1
Terminal 2 / 6	DI2 / DI3
Terminal 3 / 7	DI4 / DI5
Terminal 4 / 8	DI6 / DI7
Channel isolation	No channel-to-channel isolation
Diagnostic functions	None
State indication	Green LED per channel
Backplane insulation test	500 V DC

Ratings apply to the stated hardware execution and operating conditions. Installed firmware, companion modules and configured functions must match the application.

Siemens 6ES7131-4BF00-0AA0

03 Application map and integration boundaries

01 Machine-state feedback

Acquire contact or compatible sensor states for a PLC program.

02 Distributed interlocks

Transfer configured binary conditions through an ET 200S station.

03 Two-wire sensor groups

Connect sensors with suitable leakage and supply distribution.

04 Timed digital acquisition

Use in a compatible configured isochronous station when required.

Interleaved terminal order

Verify DI0–DI7 against the actual terminal numbering and controller byte mapping.

Off-state acceptance

Two-wire leakage and the resulting input voltage must permit a reliable zero state.

Diagnostics boundary

Channel LEDs are state indicators; this module does not provide wire-break diagnostic functions.

Configuration scope: Match the electronic module, base, interface compatibility and bit mapping. Preserve sensor supply and input timing assumptions.

Siemens 6ES7131-4BF00-0AA0

04 Technical questions that affect operation

Why can sequential terminal wiring produce wrong bits with 6ES7131-4BF00-0AA0?

Its terminal assignment interleaves channel numbers across the two terminal columns. Verify each conductor against the intended DI number and PLC bit.

How can two-wire sensor leakage affect 6ES7131-4BF00-0AA0?

Excessive off-state leakage can prevent a reliable zero. Check both the sensor leakage specification and the measured inactive input voltage.

Can 6ES7131-4BF00-0AA0 reliably capture every very short pulse?

Input filtering introduces delay. Compare the pulse duration and application sampling with the complete input path rather than treating it as a high-speed counter.

Why may additional supply terminals be required with 6ES7131-4BF00-0AA0?

Eight two-wire sensors need suitable supply distribution as well as input terminals. The chosen terminal module may need an add-on or potential-distribution arrangement.

What does an illuminated channel LED on 6ES7131-4BF00-0AA0 fail to prove?

It does not prove that the intended PLC bit, interlock or field device has been assigned correctly. Trace the signal through the application.

Can channel diagnostics on 6ES7131-4BF00-0AA0 identify an open wire?

This execution has no diagnostic functions. Use the application or external monitoring required to detect a missing field signal.

What should be checked before enabling isochronous acquisition with 6ES7131-4BF00-0AA0?

Confirm compatible station interface and firmware, hardware configuration and the controller timing design. Module support alone does not configure the station.

How should a noisy input connected to 6ES7131-4BF00-0AA0 be investigated?

Inspect supply reference, routing, shielding, terminal contact and signal levels. Compare the disturbance duration with input filtering before changing the control logic.

Siemens 6ES7131-4BF00-0AA0

05 Selection, service planning and related equipment

Match the installed arrangement

Match the complete Siemens 6ES7131-4BF00-0AA0 marking and installed configuration. Confirm the full module reference, terminal base and interleaved channel assignments.

Support and migration

The current production and manufacturer-support stage for this exact execution is unconfirmed. Match the electronic module, base, interface compatibility and bit mapping. Preserve sensor supply and input timing assumptions.

Equipment boundary

Confirm the electronic module and any terminal or potential-distribution hardware specifically itemized. Companion hardware and accessories are included only when itemized; the function of the complete installed arrangement depends on the correct combination.

Engineering review before intervention

Map the eight field signals	Label each sensor or contact with its assigned DI number and controller bit. Record sensor supply distribution and any application substitution before isolating the field circuits.
Restore the terminal assignment	Wire according to the interleaved DI terminal arrangement. Inspect the selected terminal base and provide the necessary sensor-supply distribution without confusing AUX and input terminals.

Related equipment navigation

Siemens 6ES7417-4HT14-0AB0

Siemens 6ES7216-2BD23-0XB0

Siemens 6ES7431-0HH00-0AB0

Related references support separate application assessment and do not imply replacement compatibility. Technical basis: Siemens 8DI DC24V Manual, A5E01077339-02.