# Siemens 6DD1607-0AA2

## 01 High-Performance Application Processing Module / system role

### Product function

Siemens 6DD1607-0AA2 places fast application processing beside the S7-400 control system, with response determined by the configured tasks and complete signal path.

### Selected configuration

The FM458-1 DP works with its configured application and supported expansion hardware. The eight local digital inputs are one interface group, not a description of every possible signal in an expanded control arrangement.

### Integration checkpoints

- Fast control tasks
- Digital event acquisition
- PROFIBUS-linked control
- Application-module maintenance

| | |
|---|---|
| Application role | Fast control processing within S7-400 |
| Timing relationship | Configured tasks and coordinated interfaces |
| Expansion boundary | Supported modules and application engineering |

Time-critical behavior depends on task scheduling, application configuration and connected interfaces. A fast electrical input specification does not establish the complete closed-loop response of the machine. Evaluate acquisition, computation and output paths together.

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## 02 Technical operating envelope

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|---|---|
| Backplane supply range | 4.8-5.25 V DC |
| Typical current | 1.5 A |
| Maximum current | 3 A |
| Digital inputs | 8 at X2 |
| Rated input voltage | 24 V DC |
| LOW input level | -1 to +6 V |

| | |
|---|---|
| HIGH input level | 13.5 to 33 V |
| Typical HIGH current | 3 mA at 24 V |
| Maximum rising-edge delay | 5 microseconds |
| Clock resolution | 500 ms |
| Maximum backup current | 15 microamperes |
| Input isolation | Via optional interface modules; not inherent |

Use the exact hardware execution with the supported system configuration and installation conditions.

### Can all 6DD1607-0AA2 digital inputs be assumed galvanically isolated?

No. Use the isolation details for the specific interface and expansion arrangement. Check common references and approved wiring before connecting independently referenced field circuits; isolation must not be inferred from the module category.

### Why must the PROFIBUS timing configuration of 6DD1607-0AA2 be retained?

Equidistant operation and task relationships depend on the configured application. Changing network timing can alter control behavior even when communication remains active. Verify timing-dependent functions after any authorized bus or task change.

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## 03 System integration and applications

### Fast control tasks

Run the supported engineered application in the S7-400 arrangement.

### Digital event acquisition

Use the local inputs within their specified electrical conditions.

### PROFIBUS-linked control

Integrate the configured DP communication and timing relationship.

### Application-module maintenance

Restore the approved program and expansion-hardware baseline.

### System and supply context

6DD1607-0AA2 belongs to the SIMATIC S7-400 installation described by the technical reference. Connected equipment and accessories must be included explicitly in the configured assembly.

### Application boundary

The following uses describe supported engineering roles; they do not establish interchangeability with another model or remove application-specific validation.

### What should be preserved before replacing 6DD1607-0AA2 in a fast-control application?

Retain the application, hardware configuration, communication settings and expansion-module identities. Include retained operating data where required. Restoring the module without its application baseline can leave a physically complete but nonfunctional system.

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## 04 Engineering selection decisions

### Why does the input delay of 6DD1607-0AA2 not equal total machine response time?

Input conditioning is only one stage. Task execution, communication and the output device add their own delays. Measure the complete signal path under the intended configuration before assigning a response guarantee to the machine.

### How should input-level problems on 6DD1607-0AA2 be diagnosed?

Measure the signal at the module against the specified LOW and HIGH ranges, including the return reference. Compare the electrical transition with the task-level observation. A field-device LED does not establish a valid voltage at the module.

### What distinguishes an application-loading fault from a failed 6DD1607-0AA2 input?

Check startup diagnostics and application execution first, then apply a known input stimulus. A healthy input cannot be observed by a task that did not load or start correctly. Separate the software baseline from the electrical test.

### What validates 6DD1607-0AA2 after a controlled restart?

Confirm the intended application starts, retained values are correct and configured communications are healthy. Then exercise representative inputs through to the final controlled response. Startup indication without an end-to-end test leaves timing and mapping errors unresolved.

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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

Compare the complete 6DD1607-0AA2 identity, installed connections and configuration before selecting a replacement. Retained data and the application-loading arrangement must be preserved during service. Hardware identity, configured communication and the supported expansion modules form one baseline; a mechanically fitting replacement should not be accepted without that comparison.

### Document roles

Use the original manufacturer excerpt for its preserved technical tables and drawings. This product brief explains selection and system context. The separate installation guide covers preparation, connection, tests and handover; use it together with the applicable manufacturer instructions.

### Technical basis

Siemens product data sheet, 6DD1607-0AA2.

### Related product navigation

- Siemens 6ES7321-1BH02-0AA0
- Siemens 6ES7390-1AE80-0AA0
- Siemens 6ES7334-0CE01-0AA0

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

Product enquiries