

Siemens 6ES7964-2AA00-0AB0

PROFIBUS DP Interface Submodule

Product scope

- Connects an M7-400 automation computer to an isolated PROFIBUS DP segment.
- Buffers controller and fieldbus data through 256 KB of dual-port memory.
- Supports standard DP transmission rates from 9.6 kbit/s through 12 Mbit/s.

Manufacturer source

Exact-model technical record

Verified model-specific overview, function, operating principle, applications and technical data.

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Siemens 6ES7964-2AA00-0AB0

PROFIBUS DP Interface Submodule

Product overview

Siemens 6ES7964-2AA00-0AB0 is the SIMATIC M7 IF 964-DP communication submodule with isolated RS-485 and a 256 KB dual-port memory. It connects an M7 automation computer to PROFIBUS DP at rates up to 12 Mbit/s.

6ES7964-2AA00-0AB0 provides the M7 carrier with a dedicated PROFIBUS DP channel and dual-port exchange memory. It supports a bus containing as many as 125 stations when the network topology and address plan permit.

The interface handles deterministic cyclic data exchange between the real-time M7 application and distributed DP nodes. Electrical isolation separates the RS-485 fieldbus side from the local computer electronics.

A correct replacement must preserve the bus address, baud rate, termination and project configuration for this exact 2AA00 hardware. The later 2AA01 execution must not be treated as identical without a documented compatibility review.

Technical specifications

Fieldbus	PROFIBUS DP
Physical interface	Isolated RS-485
Transmission rate	9.6 kbit/s to 12 Mbit/s
Maximum stations	125
Dual-port memory	256 KB
Maximum cable length at 9.6 kbit/s	1200 m
Maximum cable length at 12 Mbit/s	100 m
Submodule identifier	8CH
M7-400 current consumption	0.45 A at 5 V
External 5 V consumption	90 mA
Power loss	2 W
Supported carrier	SIMATIC M7-400
Topology	PROFIBUS line with terminated segment ends
Data exchange	Cyclic distributed I/O communication
Bus connector	PROFIBUS RS-485 connector

6ES7964-2AA00-0AB0 function and operating principle

Ordered configuration

The supplied hardware is the IF 964-DP 2AA00 execution with identification code 8CH.

System role

It provides the deterministic communication path between the M7 real-time task and distributed I/O stations.

Selection and installation

Network length, baud rate, connector termination and project data must be assessed as one system before commissioning.

Functional path

- Connects an M7-400 automation computer to an isolated PROFIBUS DP segment.
- Buffers controller and fieldbus data through 256 KB of dual-port memory.
- Supports standard DP transmission rates from 9.6 kbit/s through 12 Mbit/s.

Application scenarios

- High-speed machine controllers use the interface to exchange cyclic data with remote PROFIBUS I/O.
- Process cells connect drives, valve islands and instrumentation to an M7-400 host over an established DP segment.
- Legacy control upgrades can retain existing fieldbus devices while the M7 computer hardware is serviced.

6ES7964-2AA00-0AB0 engineering checks

Connectivity

- The field side uses an electrically isolated RS-485 PROFIBUS connection.
- Standard DP rates from 9.6 kbit/s to 12 Mbit/s are supported.
- Segment length falls from 1200 m at the lowest rate to 100 m at 12 Mbit/s.

Compatibility & Interoperability

- The submodule is intended for the SIMATIC M7-400 carrier environment.
- Connected stations must conform to PROFIBUS DP and use the controller project's device descriptions.
- The 2AA00 and 2AA01 order numbers require a deliberate hardware-compatibility check rather than substitution by appearance.

Configuration

- The master project defines station addresses, baud rate and the cyclic process image.
- Both physical segment ends require active termination appropriate to the RS-485 network.
- The application exchanges fieldbus data through the documented 256 KB dual-port memory.

Critical technical note

Keep the exact 6ES7964-2AA00-0AB0 hardware revision and PROFIBUS termination arrangement; the 2AA01 successor is not automatically plug-compatible.

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