VIPA CPU-314SB-314-2AG13

01 SPEED7 CPU / system role

Product function and operating context

VIPA CPU-314SB-314-2AG13 combines program execution and distributed-I/O communication in a compact System 300S controller, with the communication mode selected for the installed network.

The controller provides 512 KB integrated load memory and 256 KB work memory, expandable to 512 KB under the supported memory arrangement. Its work memory is divided between program and data, so raw memory capacity is not an unrestricted program-size allowance.

Functional path

PLC program → SPEED7 execution → Configured PROFIBUS role → Distributed I/O

Processing	SPEED7 controller core
Memory	256 KB standard work memory
Fieldbus	Integrated PROFIBUS master/slave

The integrated PROFIBUS interface supports master and slave roles, with point-to-point operation available through configuration. The DP master supports rates from 9.6 kbit/s to 12 Mbit/s and up to 124 slaves within the specified address and data limits.

CPU-314SB-314-2AG13

02 Technical operating envelope

Supply voltage	24 V DC; 20.4–28.8 V permitted
Rated current	1 A
Idle current	200 mA
Inrush current	5 A
Power loss	6 W
Integrated load memory	512 KB

Standard work memory	256 KB
Maximum work memory	512 KB, supported expansion required
Minimum bit/word instruction	0.01 µs
PROFIBUS rate	9.6 kbit/s to 12 Mbit/s
DP master slaves	124 maximum
SPEED-Bus interface	Not fitted

The CPU 314SB/DPM, order 314-2AG13, is the hardware identified by the offered CPU-314SB-314-2AG13 string. Memory expansion and interface mode remain configuration-dependent.

Operating interpretation

DP network capacity, process-image size and per-slave data limits must be checked together; the advertised slave count alone does not validate a project.

Configuration boundary

Match the exact CPU order, actual memory expansion, interface role and software configuration before substitution.

How many DP slaves can CPU-314SB-314-2AG13 manage?

The DP master supports up to 124 slaves, subject to the available address space and per-slave data limits.

CPU-314SB-314-2AG13

03 System integration and applications

Distributed PROFIBUS control

Execute a PLC application while managing the configured DP slave system.

Configured DP slave operation

Exchange process data with a higher-level master using the supported slave role.

System 300S program execution

Run the approved application within the available work-memory and data allocation.

Existing-controller replacement

Retain hardware configuration, interface roles and application data for a 314-2AG13 installation.

System and supply context

VIPA CPU-314SB-314-2AG13 operates within the following defined system context. Preserve CPU-314SB-314-2AG13 and the installed memory/interface configuration.

Application boundary

The applications below describe its technical role. Select associated hardware and configuration for the actual installation.

How much work memory is standard in CPU-314SB-314-2AG13?

Standard work memory is 256 KB. The supported maximum is 512 KB; an expansion must not be assumed to be installed.

CPU-314SB-314-2AG13

04 Engineering selection decisions

Does SPEED7 processing mean CPU-314SB-314-2AG13 has a SPEED-Bus connector?

No. The 314SB/DPM 314-2AG13 uses SPEED7 processing but has no SPEED-Bus interface.

Can the integrated PROFIBUS interface of CPU-314SB-314-2AG13 operate as a slave?

Yes. Master and slave roles are supported, with the configured role and project determining how data is exchanged.

Why should the 24 V supply for CPU-314SB-314-2AG13 be checked during startup?

The permitted supply is 20.4–28.8 V and inrush current is 5 A. Startup supply behavior can differ from the 200 mA no-load condition.

What distinguishes a missing DP slave from a healthy network on CPU-314SB-314-2AG13?

The PROFIBUS run, error and data-exchange indicators show different states. Check the actual slave diagnostics and configuration rather than relying on CPU RUN alone.

Interpret CPU and DP indications	Observe CPU state together with PROFIBUS run, error and data-exchange indicators. A CPU in RUN can still have a missing or incorrectly configured slave.
Retain the restored configuration	Save memory allocation, interface role, slave map, diagnostics and the tested application state. Resolve bus or memory discrepancies before returning the controller to service.

CPU-314SB-314-2AG13

05 Configuration boundary and references

Lifecycle and support

The current manufacturing and factory-support phase of CPU-314SB-314-2AG13 is unconfirmed. Apter Power availability is assessed separately from manufacturer lifecycle status.

Replacement assessment

Match the exact CPU order, actual memory expansion, interface role and software configuration before substitution.

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

VIPA System 300S CPU 314-2AG13, HB140, revision 14-40.

Related product navigation

- B&R X20BC8084
- Siemens 6ES7214-1AG40-0XB0

These are related references, not confirmed substitutes or an automatically approved assembly.

Product enquiries