Siemens 6ES7 313-6CF03-0AB0

01 Function and selected configuration

Product function

The integrated digital I/O and dedicated DP interface let Siemens 6ES7 313-6CF03-0AB0 coordinate local machine signals and distributed stations within an S7-300 automation system.

Selected configuration

CPU 313C-2 DP with integrated 16 DI/16 DO, 64 KB work memory and separate MPI and DP interfaces. A SIMATIC Micro Memory Card supplies load memory and maintenance-free program retention. Working memory is not expandable, so program and data usage must fit the CPU capacity independently of the MMC size.

Functional path

Digital field I/O	CPU / STEP 7 logic	MPI or PROFIBUS DP	Configured devices

Processing	64 KB integrated work memory; minimum 0.1 microsecond bit operation
Local I/O	16 digital inputs and 16 digital outputs; no integrated analog channels
Network	MPI and isolated RS485 PROFIBUS DP interface

Three integrated counting channels support frequency measurements up to 30 kHz. Three pulse-width-modulated outputs operate up to 2.5 kHz; their terminal allocation must be coordinated with the digital I/O configuration.

6ES7 313-6CF03-0AB0 / Technical operating envelope

02 Technical operating envelope

CPU design	CPU 313C-2 DP
Work memory	64 KB; not expandable
Load memory	SIMATIC Micro Memory Card; maximum 8 MB
Integrated digital inputs	16
Integrated digital outputs	16
Integrated analog channels	None
Rated supply	24 V DC
Permissible supply	20.4-28.8 V DC
Power loss	10 W typical

MPI data rate	Maximum 187.5 kbit/s
DP interface	Isolated RS485; master or slave
DP transmission rate	Up to 12 Mbaud
DP slaves per station	Maximum 32
Integrated counters	3 channels; frequency measurement up to 30 kHz
PWM outputs	3 channels; maximum 2.5 kHz
S7 timers / counters	256 / 256
Diagnostics buffer	Maximum 100 entries
Programming package	STEP 7 V5.4 SP3 or later; V5.3 SP2 with HSP 0123 also supported

CPU-specific ratings are taken from the 313C-2 DP column for the 6CF03 order code. Distributed I/O limits and technology-function assignments must be checked alongside the program memory requirement.

6ES7 313-6CF03-0AB0 / System integration and applications

03 System integration and applications

Local sequence control

Use the 16 DI and 16 DO to execute configured machine sequencing and discrete interlocks.

Distributed I/O coordination

Operate a configured PROFIBUS DP master network with up to 32 slaves within CPU data limits.

Pulse and frequency tasks

Use the integrated counting, frequency or PWM functions with their assigned terminals and signal limits.

S7-300 program maintenance

Retain the MMC, STEP 7 hardware configuration and diagnostics for an existing CPU 313C-2 DP installation.

System and supply context

This is the CPU 313C-2 DP variant. Its DP interface is different from the serial PtP interface of the neighboring CPU 313C-2 PtP; they are not interchangeable configurations.

Application boundary

Applications use the configured STEP 7 logic, local digital I/O and compatible distributed modules. No safety-controller capability or integrated analog I/O is implied.

Which analog signals can connect directly to 6ES7 313-6CF03-0AB0?

The CPU has no integrated analog input or output channels. Analog signals require suitable expansion or distributed I/O modules configured in the STEP 7 project.

6ES7 313-6CF03-0AB0 / Engineering selection decisions

04 Engineering selection decisions

Can 6ES7 313-6CF03-0AB0 expand its 64 KB working memory with a larger MMC?

No. Working memory is fixed at 64 KB. A SIMATIC Micro Memory Card provides separate load memory, with a supported capacity up to 8 MB; it does not enlarge the working-memory area.

How do the two communication interfaces on 6ES7 313-6CF03-0AB0 differ?

The first interface provides MPI at up to 187.5 kbit/s. The second is an electrically isolated RS485 PROFIBUS DP interface that can operate as a DP master or slave at up to 12 Mbaud.

Does 6ES7 313-6CF03-0AB0 support isochronous DP master operation?

No. The CPU 313C-2 DP master specification does not support isochronous mode or constant bus cycle time. SYNC/FREEZE and DPV1 are supported in the DP master role.

What diagnostic history can 6ES7 313-6CF03-0AB0 retain for fault investigation?

The CPU provides a diagnostics buffer with up to 100 entries. Capture the buffer before clearing a fault or changing the program so that the sequence of CPU and communication events can be reviewed.

Check DC power	Verify 20.4-28.8 V DC at the CPU and the protective circuit design before energization.
Preserve signal allocation	Check integrated I/O addresses and technology-function assignments before enabling outputs.

6ES7 313-6CF03-0AB0 / Configuration boundary and references

05 Configuration boundary and references

Lifecycle and support

The current manufacturing and OEM support stages for 6ES7 313-6CF03-0AB0 require confirmation from Siemens. Apter Power availability is confirmed separately.

Replacement assessment

Confirm the exact 6CF03 order code, firmware, project compatibility, integrated technology functions and DP configuration before selecting a replacement CPU.

Document roles

Use the original manufacturer excerpt for its preserved technical tables and drawings. This product brief explains configuration and selection boundaries. The independent installation guide organizes preparation, connection, testing and handover. It does not replace the applicable manufacturer installation instructions.

Technical basis

SIMATIC S7-300 CPU 31xC and CPU 31x: Specifications, A5E00105475-08, 06/2008.

Related product navigation

- Siemens 6ES7315-1AF03-0AB0
- Siemens 6ES7321-1BL00-0AA0
- Siemens 6ES7322-1BL00-0AA0

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

Product enquiries