Siemens 6GK7342-5DA02-0XE0

01 PROFIBUS Communication Processor

Siemens 6GK7342-5DA02-0XE0 handles the fieldbus exchange separately from CPU program execution. Correct data consistency depends on the configured DP role, buffer lengths and repeated processing of the communication blocks.



Physical and functional arrangement

The processor uses a 9-pin D-sub fieldbus connector and a separate DC supply connection. It fits the S7-300 backplane arrangement, including suitable IM360/361 expansion racks; an IM365 expansion rack does not carry the required communication bus. Power and functional grounding must follow the complete station design.

Signal path and configuration

DP_SEND and DP_RECV exchange the CPU buffers with the communication processor. Transfers larger than a single block segment require repeated block calls, so the bus transmission speed alone does not determine application response. The CPU scan, competing services and consistent treatment of returned status must also be considered.

Application boundary

The DA02 version can act as a DP slave but does not accept slave-mode SYNC/FREEZE. A later DA03 has different capabilities and block behavior. Preserve the configured role and evaluate any replacement against the application program rather than assuming that all CP342-5 versions are interchangeable.

Values apply to the electrical CP 342-5, 6GK7342-5DA02-0XE0 execution. FO interface and later DA03-only functions are excluded.

Siemens 6GK7342-5DA02-0XE0

02 Technical data and engineering limits

PROFIBUS interface	RS-485; 9-pin D-sub female
Transmission rates	9.6 kbit/s to 12 Mbit/s; discrete configured rates
DP slaves as master	124 maximum
Master input / output area	2160 bytes each
Data per slave as master	244 input bytes / 244 output bytes maximum
DP slave input / output area	240 bytes each
Supply	24 V DC
Typical supply current	0.25 A at 24 V
Typical backplane current	150 mA
Power loss	6 W

Additional interface data

Minimum slave interval	2 ms
Slave identification	8093H; SIEM8093.GSD
Horizontal ambient	0 to 60 °C
Vertical ambient	0 to 40 °C
Supply conductor section	0.25–2.5 mm²
PROFIBUS data pins	Pin 3: B; pin 8: A

Values apply to the electrical CP 342-5, 6GK7342-5DA02-0XE0 execution. FO interface and later DA03-only functions are excluded.

Interpreting the operating envelope

Size the CPU buffers and communication-block calls for the selected DP role. The master total, per-slave data limit and slave-mode limit describe different operating contexts and must not be added together. At the physical interface, the RS-485 A/B pins and reference conductors have separate purposes; check the complete connector assignment and segment termination before changing software parameters.

Siemens 6GK7342-5DA02-0XE0

03 Application map and integration boundaries

01 Distributed I/O master

Exchange configured process buffers with PROFIBUS DP slaves in an S7-300 system.

02 Subordinate controller interface

Present a defined slave I/O area to a higher-level DP master.

03 S7 station communication

Use configured S7 connections while accounting for combined communication workload.

04 Legacy electrical bus service

Maintain a copper PROFIBUS segment with the correct termination and supported baud rate.

Consistent buffers

Treat CPU data-area updates and communication-block completion as one application design problem. Partial updates can produce inconsistent process information.

Electrical segment

A/B assignment, shield bonding and termination belong to the entire RS-485 segment. Check both ends before blaming the CP for communication errors.

Version-sensitive behavior

Retain the DA02 identity when reviewing slave functions and application blocks; later DA03 features do not retroactively change this hardware.

Configuration scope: Preserve the DP role, CPU compatibility, I/O lengths and block behavior when considering a newer CP.

Siemens 6GK7342-5DA02-0XE0

04 Technical questions that affect operation

1 Why does raising the bus rate on 6GK7342-5DA02-0XE0 not guarantee a shorter CPU response?

The CPU must still execute DP_SEND and DP_RECV. Segmented transfers, scan time and concurrent services contribute to the complete response.

2 Can 6GK7342-5DA02-0XE0 be installed behind an IM365 expansion connection?

No. The IM365 does not route the communication bus required by this CP; use a supported rack arrangement.

3 When can 6GK7342-5DA02-0XE0 be replaced without downloading from a programming device?

When CP configuration is stored in the CPU and retained in its load memory. Verify that the retained configuration corresponds to the replacement execution.

4 Why may a bus-parameter download to 6GK7342-5DA02-0XE0 require MPI?

Changed bus parameters can disrupt the PROFIBUS path used for the download. The DA02 procedure uses MPI for this change.

5 How should large data buffers be handled with 6GK7342-5DA02-0XE0?

Continue the prescribed communication-block calls until the segmented exchange completes, and evaluate status rather than treating one call as a completed large transfer.

6 Does the slave behavior of 6GK7342-5DA02-0XE0 match every later CP342-5 version?

No. In particular, DA02 slave mode does not support SYNC/FREEZE. Review role-dependent behavior and block compatibility during migration.

7 What can be lost when a CPU retaining 6GK7342-5DA02-0XE0 configuration loses backup power?

Configuration stored only in volatile load memory can be lost. Verify battery-backed or nonvolatile retention before relying on automatic replacement loading.

8 How can the wrong GSD affect a slave application using 6GK7342-5DA02-0XE0?

An incorrect device description can create mismatched identification and I/O lengths. Match the electrical CP execution and the configured input/output areas.

Siemens 6GK7342-5DA02-0XE0

05 Selection, service planning and related equipment

Match the installed arrangement

Match the complete Siemens 6GK7342-5DA02-0XE0 marking and installed configuration. Compare the DA02 order code, firmware marking, RS-485 connector and mode switch.

Support and migration

The current production and manufacturer-support stage for this exact execution is unconfirmed. Preserve the DP role, CPU compatibility, I/O lengths and block behavior when considering a newer CP.

Equipment boundary

Confirm the communication processor, bus interconnector and power connector as 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

Capture the bus assignment	Save the STEP 7 station and network configuration. Record the PROFIBUS address, rate, DP role, I/O buffer lengths and connections. Identify the CPU blocks that exchange data and establish a controlled process state before disconnecting a live segment.
Confirm the rack path	Isolate the station supply and verify the target rack carries the S7 communication bus. Inspect the interconnector and power terminals; do not place the CP behind an IM365 expansion link. Retain the approved reference-potential grounding arrangement.

Related equipment navigation

Siemens 6ES7153-2BA02-0XB0

Siemens 6ES7321-1BL00-0AA0

Siemens 6ES7332-8TF01-0AB0

Related references support separate application assessment and do not imply replacement compatibility. Technical basis: Siemens CP 342-5 / CP 342-5 FO Manual, C79000-G8976-C146/01.