Siemens 6ES5946-3UA22

Installation & Commissioning Guide

Siemens 6ES5946-3UA22 is a CPU 946 F central processing unit for the SIMATIC S5-155U programmable controller. It executes the STEP 5 control program and coordinates the controller's rack-based automation tasks.

PRODUCT ROLE AND VERIFIED FEATURES

Feature 1

Identified by Siemens as a SIMATIC S5 CPU 946 F central processing unit.

Feature 2

Assigned to the S5-155U programmable-controller platform.

Feature 3

Executes the stored STEP 5 user program and controller operating functions.

Feature 4

Interfaces with the S5 rack, memory and I/O resources used by the installed controller.

VERIFIED DATA SNAPSHOT

Product family	SIMATIC S5
Processor type	CPU 946 F
Controller system	S5-155U
Programming environment	STEP 5

SYSTEM RELATIONSHIP

Field device → **Product interface** → **System channel** → **Verified response**

APTERPOWER SALES TEAM
WhatsApp / Phone: +86 180 3023 5313
Email: sales13@apterpower.com
Scan the approved WhatsApp code for model-specific support.

Pre-installation readiness

READINESS GATE

Identity

Compare the complete marking with the approved work order and installed record.

System match

Confirm the receiving channel, mating components and controlled configuration.

Physical condition

Inspect mounting surfaces, connectors, terminals, cable and support hardware.

Work controls

Apply authorized isolation, bypass, access and restoration procedures.

TECHNICAL PROFILE FOR THE WORK

Product family	**Processor type**
SIMATIC S5	CPU 946 F
Controller system	**Programming environment**
S5-155U	STEP 5
Module role	**Lifecycle**
Central processing unit	Discontinued product

IMPORTANT NOTICE Resolve every unmatched interface, configuration or receiving-system condition before removal or installation.

SOURCE AND WORK CONTROLS

Manufacturer source	Siemens Industry Mall product record for 6ES5946-3UA22
Evidence boundary	Technical statements are limited to the identified product or applicable manufacturer family.
Selection control	Use the complete ordering string and verify the installed system before purchase or installation.

Installation sequence

CONTROLLED WORK STEPS

01	Confirm the complete 6ES5946-3UA22 article number and CPU 946 F designation before removing the installed CPU.
02	Verify that the host controller is the documented S5-155U platform.
03	Back up the STEP 5 user program, hardware configuration and operating parameters.
04	Record rack slot, switch positions, memory media and interface connections.
05	Remove power and follow site electrostatic-discharge controls before handling the module.
06	Do not transfer memory media until the required CPU state and site procedure are confirmed.
07	Check startup indicators, controller mode and I/O communication after installation.
08	Validate interlocks and the controlled machine sequence before returning outputs to service.

CONNECTION RECORD

As found	Photograph and label every connection and installed orientation before removal.
Mechanical	Record mounting position, support, clearance and connector engagement.
Electrical	Record polarity, common, shield, channel assignment and cable route.
Configuration	Preserve approved settings, scaling, alarm logic and acceptance limits.
As left	Record the final physical condition and any controlled deviation.

Field device → **Product interface** → **System channel** → **Verified response**

WORK HOLD POINTS

Before removal	Identity, position, wiring, orientation and controlled settings recorded.
Before connection	Mating interfaces, condition and routing reviewed.
Before power-up	Mechanical work, wiring, shielding and configuration independently checked.
Before release	Static value, dynamic response and protection behavior accepted.

Commissioning and functional proof

COMMISSIONING SEQUENCE

Initial state

Observe status at power-up and check for unexpected fault or alarm indication.

Static value

Verify the expected bias, gap, loop, contact or channel value for the application.

Dynamic response

Apply the approved machine or test stimulus and confirm response and scaling.

Protection path

Verify the configured alarm, relay, data or receiving-system behavior.

APPLICATION-SPECIFIC EVIDENCE

Legacy machine control

Run the existing STEP 5 control program in a maintained S5-155U rack.

Process sequencing

Coordinate deterministic logic, interlocks and output decisions in the installed controller.

Plant maintenance

Restore the documented processor position without changing the approved application program.

System recovery

Return the controller to its recorded startup state after an exact-article replacement.

ACCEPTANCE RECORD

Identity	Complete marking and final installed position recorded.
Physical inspection	Mounting, connectors, terminals and routing checked.
Channel status	Expected status and configured measurement confirmed.
Functional test	Required output or protection response demonstrated.
Restoration	Bypasses removed and operating state approved.

COMMISSIONING QUESTIONS

What processor type is Siemens 6ES5946-3UA22?	It is the Siemens SIMATIC S5 CPU 946 F central processing unit.
Which controller platform uses Siemens 6ES5946-3UA22?	Siemens assigns it to the S5-155U programmable-controller system.

Release record and technical references

CLOSEOUT QUESTIONS

Which programming environment applies to Siemens 6ES5946-3UA22?	The controller application uses the SIMATIC STEP 5 environment.
What should be backed up before replacing Siemens 6ES5946-3UA22?	Back up the user program, hardware configuration and operating parameters.
Which physical details must be recorded before removing Siemens 6ES5946-3UA22?	Record the rack slot, switch positions, memory media and every connected interface.
What verifies Siemens 6ES5946-3UA22 after startup?	Confirm CPU status, operating mode, I/O communication, interlocks and the controlled sequence.
Which installation records should accompany Siemens 6ES5946-3UA22?	Record the complete article number, cpu module position, connections, controlled settings and functional test result.
When can Siemens 6ES5946-3UA22 return to service?	Return it to service only after diagnostics, communication, interlocks and the intended system response meet the approved acceptance criteria.

RELATED MODELS FOR INSTALLATION PLANNING

Siemens 6ES5928-3UB21	Installation-planning reference. Review the complete ordering string before selection.
Siemens 6ES5470-4UA12	Installation-planning reference. Compare the required interface and system position.
Siemens 6ES5465-4UA12	Installation-planning reference. Confirm the execution independently for the intended task.

MANUFACTURER SOURCE AND FINAL CONTROL

Manufacturer source	Siemens Industry Mall product record for 6ES5946-3UA22
Evidence boundary	Technical statements are limited to the identified product or applicable manufacturer family.
Selection control	Use the complete ordering string and verify the installed system before purchase or installation.

IMPORTANT NOTICE Release the equipment only after the responsible site authority accepts the recorded result.

APTERPOWER SALES TEAM
WhatsApp / Phone: +86 180 3023 5313
Email: sales13@apterpower.com
Scan the approved WhatsApp code for model-specific support.