# Siemens 6ES5947-3UR21

## Installation & Commissioning Guide

Siemens 6ES5947-3UR21 is a CPU 947R F central processing unit for the SIMATIC S5-155H 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 947R F central processing unit.

**Feature 2**

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

**Feature 3**

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

**Feature 4**

Supports the redundant processor role defined for the S5-155H architecture.

### VERIFIED DATA SNAPSHOT

| | |
|---|---|
| **Product family** | SIMATIC S5 |
| **Processor type** | CPU 947R F |
| **Controller system** | S5-155H |
| **Programming environment** | STEP 5 |

### SYSTEM RELATIONSHIP

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

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# 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**<br>SIMATIC S5 | **Processor type**<br>CPU 947R F |
| **Controller system**<br>S5-155H | **Programming environment**<br>STEP 5 |
| **Module role**<br>Central processing unit | **Lifecycle**<br>Discontinued product |
| **System architecture**<br>Redundant S5-155H processor | |

**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 6ES5947-3UR21 |
| **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 6ES5947-3UR21 article number and CPU 947R F designation before removing the installed CPU. |
| **02** | Verify that the host controller is the documented S5-155H 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 S5-155H 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 6ES5947-3UR21?** | It is the Siemens SIMATIC S5 CPU 947R F central processing unit. |
| **Which controller platform uses Siemens 6ES5947-3UR21?** | Siemens assigns it to the S5-155H programmable-controller system. |

# Release record and technical references

## CLOSEOUT QUESTIONS

| | |
|---|---|
| **Which programming environment applies to Siemens 6ES5947-3UR21?** | The controller application uses the SIMATIC STEP 5 environment. |
| **What should be backed up before replacing Siemens 6ES5947-3UR21?** | Back up the user program, hardware configuration and operating parameters. |
| **Which physical details must be recorded before removing Siemens 6ES5947-3UR21?** | Record the rack slot, switch positions, memory media and every connected interface. |
| **What verifies Siemens 6ES5947-3UR21 after startup?** | Confirm CPU status, operating mode, I/O communication, interlocks and the controlled sequence. |
| **Which installation records should accompany Siemens 6ES5947-3UR21?** | Record the complete article number, redundant cpu module position, connections, controlled settings and functional test result. |
| **When can Siemens 6ES5947-3UR21 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 6ES5931-8MD11 | Installation-planning reference. Review the complete ordering string before selection. |
| Siemens 6ES5482-4UA20 | Installation-planning reference. Compare the required interface and system position. |
| Siemens 6ES5430-4UA12 | Installation-planning reference. Confirm the execution independently for the intended task. |

## MANUFACTURER SOURCE AND FINAL CONTROL

| | |
|---|---|
| **Manufacturer source** | Siemens Industry Mall product record for 6ES5947-3UR21 |
| **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.

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