SIEMENS

Getting Started with the SIMATIC S7-1500 Starter Kit

Ready-to-use in next to no time

Get started in just a few steps

With our SIMATIC S7-1500 Starter Kit

With SIMATIC S7-1500, you have chosen one of the fastest controllers on the market, with system performance that guarantees minimum response times and maximum control performance. SIMATIC S7-1500 is the standard device of the new controller family for universal applications as well as control tasks for medium and complex mechanical engineering and plant building. On the coming pages, you will learn how quick and simple it is to install, wire, switch on and configure the controller.

» Getting Started

Want some more detail? In our interactive Getting Started, all the information you need about assembling the SIMATIC S7-1500 is available online. In short video sequences, we show you step-by-step how easy it is to commission, configure and program your controller. Each individual operation can be followed in a universal example. In addition, you can find information on other interesting topics such as security, team engineering or motion control.

siemens.com/s7-1500-getting-started

The SIMATIC S7-1500 Starter Kit contains:

- SIMATIC CPU 1511-1 PN
- SIMATIC Memory Card, 4 MB
- Digital input DI 16 x 24 V DC HF
- Digital output DO 16 x 24 V DC/0.5 A ST
- SIMATIC TOP connect – Fully modular connection:
  – Front connector module, push-in
  – Connecting cable, length 3 m
  – 3-wire terminal module, push-in
- PM1507 power supply
- Mounting rail 160 mm, front connector
- Standard Ethernet CAT 5 cable, length 2 m
- Documentation

Maximum engineering efficiency

Programming in the TIA Portal

Make full use of the performance power of the S7-1500, and benefit from the efficient new programming options in the TIA Portal.
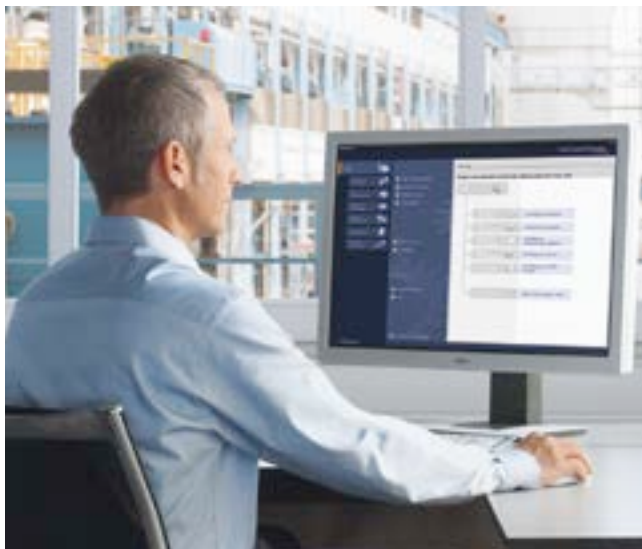
» Programming Guideline

How can the S7-1500 be programmed effectively? What are the differences in system architecture compared to the S7-300 or S7-400, and what do I have to observe in particular? All your questions are answered in the Programming Guideline: Here you can find important information and recommendations, supported with understandable explanations.
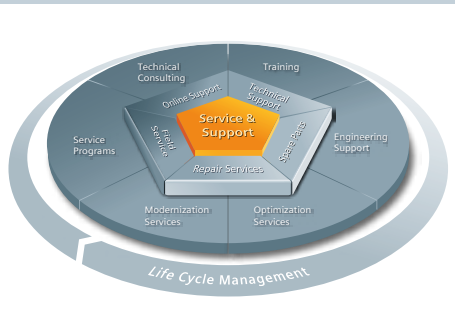
siemens.com/s7-1500-programmingguide

» Information system

The TIA Portal also comprises a comprehensive information system. It supports you with background information and operating instructions for all functions of the new controller family for solving your tasks. In the chapter titled "Programming instructions," you will also find a host of useful examples for effective programming of the S7-1500.

Learn more with just a few clicks

Service and support

Throughout the entire life cycle of your automation solution, Siemens Industry Online Support is there for you with a product-oriented, system-oriented, and application-oriented service portfolio – around the world.

support.automation.siemens.com

TIA Portal Support

Learn all about the TIA Portal at:

siemens.com/tia-portal-online-support

Automation tasks in less than 10 minutes

Want to save engineering time on a daily basis? Find out how easy that is at:

siemens.com/automation-tasks

TIA Selection Tool

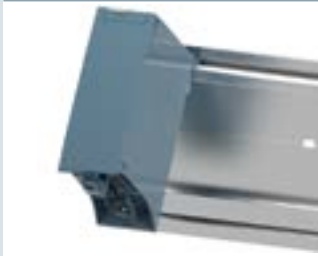Use the TIA Selection Tool for easy selection, configuration and ordering of products:

siemens.com/tia-selection-tool

Simple installation

Step 1

Hook the load current supply onto the mounting rail.

Step 2

Open the front cover and press the fuse terminal down. Then pull out the mains connection plug.

Step 3

Remove the 4-pin connection plug beneath the load current supply and screw the load current supply tight.

Step 4

Insert the U-connector into the back of the CPU.

Step 5

Hook the CPU onto the mounting rail and screw tight.

Step 6

Plug the U-connector onto the back of the digital input module.

Step 7

Attach the digital input module to the mounting rail. Ensure the rear of the module is plugged into the U-connector. Screw the module tight.

Step 8

Attach the digital output module to the mounting rail. Ensure the rear of the module is plugged into the U-connector. Screw the module tight.

Simple wiring

How to wire the assembly:

Step 1

To wire the mains connection plug, prise off the connector cover using a suitable tool.

Step 2

Connect the power supply cable according to the terminal diagram in the plug. You can find out the voltage for which the plug is suitable on the back of the plug.

Step 3

Tighten the screw on the front side of the mains connection plug.

Step 4

Insert the plug into the load current supply, and wire the load current supply with the CPU.

How to wire the input and output modules:

Step 1

To wire the digital input module, feed the 24 V DC supply voltage in at terminals 20 (M) and 19 (L+).

Step 2

Insert the potential bridges between the two bottom terminals.

Step 3

Connect terminals 39 (L+) and 40 (M) of the digital input module to terminals 19 (L+) and 20 (M) of the digital output module.

Step 4

Insert the four potential bridges between the terminals, and connect terminals 30 and 40, as well as 29 and 39 with each other.

Simply switch on

How to wire the front connector:

Step 1

Connect the individual wires in accordance with the connection diagram on the inside of the front cover in the terminal, and screw tight.

Step 2

Release the support for the front connector, and tip it out gently from the pre-wiring position.

Step 3

Place the front connector in the vertical end position. This establishes an electrical connection between the front connector and the module.

How to switch the S7-1500 on:

Step 1

Connect the mains connection plug to the load current supply, then connect the mains connection plug to the power supply.

Step 2

Insert an empty SIMATIC Memory Card into the CPU.

Step 3

Set the load current supply switch to the ON position.

System cabling with SIMATIC TOP connect

The Starter Kit also includes SIMATIC TOP connect. With this fully modular connection, you can wire devices even more simply and safely.

siemens.com/s7-systemcabling

How to create a project and configure the hardware:
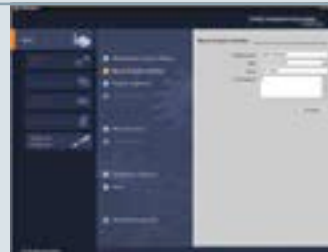
Step 1

After you have set up and wired the hardware, install the TIA Portal on your PG / PC. Installation of the software packages is handled automatically by the Setup program. Just insert the DVD into the drive to start the Setup. The installation instructions and recommended system requirements will appear.

Step 2

Open the TIA Portal and select the command "Create new project" in the "Start" area.
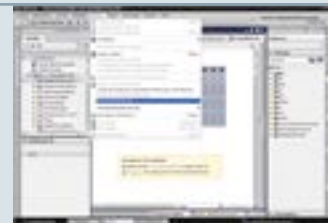
Step 3

In the "Devices & Networks" area, select the command "Create new device" and create an unspecified CPU.

Step 4

In the project navigation, select the unspecified CPU, and then the function "Hardware detection" in the "Online" menu.

Step 5

1. Select **"PN/IE"** as the PG/PC interface type and select the interface.

2. Select the CPU from the compatible stations in the subnet.

3. Click **"Detect"** to replace the unspecified CPU with the connected CPU type, and to create the hardware configuration automatically.

Open the following link to the interactive Getting Started for the SIMATIC S7-1500 controller family together with the TIA Portal.

siemens.com/s7-1500-getting-started

Here you will find practical examples covering all aspects of the TIA Portal.

Find out more:

siemens.com/tia-selection-tool

Experience the TIA Selection Tool:

> **Select, configure and order devices for Totally Integrated Automation.**

> **It generates a complete order list directly from your product selection or product configuration.**

The TIA Selection Tool – at a glance!

Siemens provides automation and drive products with industrial security functions that support the secure operation of plants or machines. They are an important component in a holistic industrial security concept. With this in mind, our products undergo continuous development. We therefore recommend that you keep yourself informed about new features and updates for our products. Information and newsletters can be found at:
http://support.automation.siemens.com

To ensure the secure operation of plant and machines, it is also necessary to take suitable preventive action (e.g. cell protection concept) and to integrate the automation and drive components into a holistic, state-of-the-art industrial security concept for the entire plant or machine. Products used from other manufacturers should also be taken into account here. You will find further information at:
www.siemens.com/industrialsecurity

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