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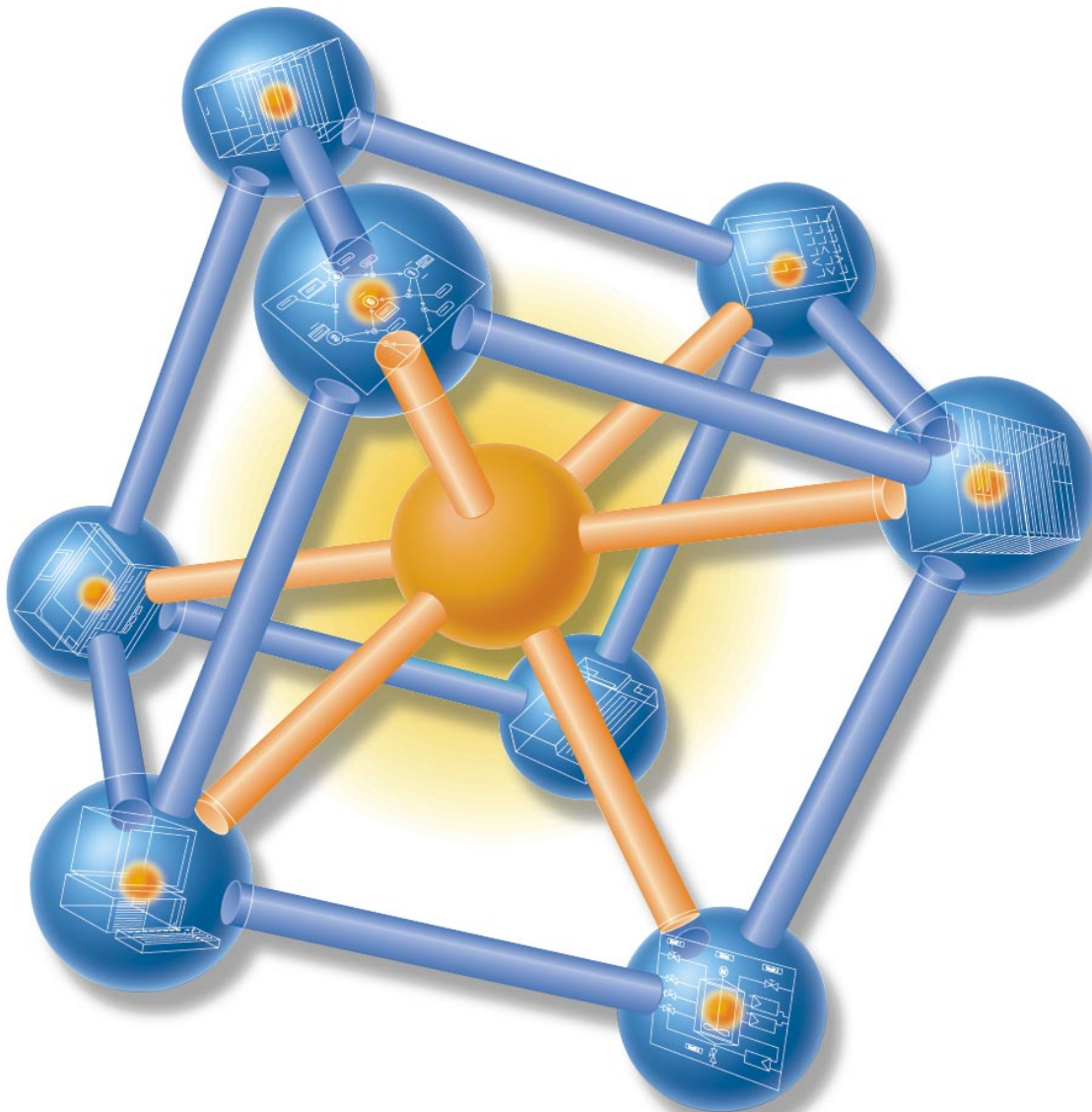
SIMATIC

CP 340

Getting Started

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First Steps in Commissioning



This Guide uses a real-life example to take you through the four steps for setting up a fully functional application that will enable you to transfer data via the serial interface and to familiarize yourself with and test the basic hardware and software features of your CP 340. The cross-references tell you where to find more detailed information on specific topics in the operating manual.

It will take you between one and two hours to work your way through the example, depending on your prior experience.

Preconditions

These are the preconditions for this example:

- You have an S7-300 station, consisting of a power supply module, a CPU and two SM323 DI16/DO16 x 24V/0.5A (one for input and output each).
- STEP 7 (\geq V5.0) is correctly installed on your programming device.
- You have configured a project for the S7-300 station.
- The programming device is connected to the CPU.
- You have a CP 340 module complete with the appropriate configuration package and connecting cable.
- You have prepared your connection partner for serial data transfer. Your partner must work with protocol 3964(R) as high priority for the commissioning of this sample.

Installing the Configuration Package on your Programming Device

The configuration package consists of a parameterization tool for the CP 340, a library containing function blocks, and a demo program.

Start the installation program on the CD by double-clicking the file called SETUP.EXE.

Follow the instructions issued by the installation program.

Installing the CP 340, Connecting to the Communication Partner

Plug the bus connection supplied with the CP 340 into the CPU's bus port. Hook the CP 340 over the rail, lower the bottom edge into position and install the securing screws.

Use the connecting cable to interconnect the CP 340 and your connection partner. The pin assignment of the interface adapter is detailed in Appendix B of the operating manual.

Test: Apply line voltage to the power supply module.

When the initialization phase completes, the SF LED on the CP 340 is on.

Assigning Parameters for the CP 340

Open your project in SIMATIC Manager.

In your project, call up the HW Config configuration table.

In the hardware catalog, select the CP 340 with the correct order number and drag it to the appropriate slot.

Double-click the CP 340 to open the "Properties CP 340" form.

Note the module address under "Address" (in the demo this address is 288 \rightarrow 120 Hex). You will need this value if necessary when you set up the link to your user program.

Click the **Parameters** button and select the "3964(R)" protocol. Double-click the **Envelope**.

Click the **OK** button to accept the parameterization defaults: 9600 bit/s, 8 data bits, 1 stop bit, even parity, low priority.

Select **File \rightarrow Save** to save your parameterization settings and exit the form with **File \rightarrow Exit**. In the "Properties CP 340" form, click the **OK** button.

Save the configuration in your project by selecting **Station \rightarrow Save and Compile**.

Transfer the configuration with the CPU in STOP by selecting **PLC \rightarrow Load to module**.

The data are transferred directly to the CPU and the CP 340. The SF LED goes out to indicate that loading was successful.

Select [Station](#) → [Exit](#) to close HW Config.

Linking to the User Program

The demo project “zXX21_01_PtP_Com_CP34x” was installed in the \Siemens\STEP7\Examples catalog when you installed the configuration package.

In SIMATIC Manager, open this project by selecting [File](#) → [Open...](#) → [Projects](#) and double-click the sub-project called “CP340 PtP Connection”

Open the S7 program of the CPU in this project. Double-click the “Blocks” container.

Copy all the blocks except the system data from this container to your project under [SIMATIC 300 Station](#) → [CPU3xx](#) → [S7 Program](#) → [Blocks](#).

- FC10 is cyclically called by OB1
- FC11 FC with SEND
- FC12 FC with RECEIVE
- DB2, DB3 Instance DBs for the standard FBs
- DB10 The source DB for send
- DB20 The destination DB for received data
- OB1 Cyclic OB
- OB100 Restart (warm start) OB
- FB2, FB3 Standard FBs for RECEIVE, SEND

Open OB100 by double-clicking on it in your project and verify the module address “288” in the first row of network 1.

Save the blocks by selecting [File](#) → [Save](#).

No other changes have to be made to the FCs, so select [File](#) → [Exit](#).

In SIMATIC Manager, select [SIMATIC 300 Station](#) → [CPU3xx](#) → [S7 Program](#) → [Blocks](#).

Load all the S7 blocks to your CPU (CPU in STOP mode) with [PLC](#) → [Load](#).

Switch the CPU to RUN.

Send

PEW 0: Now switch bits 0.1 (enabling FC11 and FC12), 0.6 (REQ for P_SEND) and 1.1 (selection of send request with a length of 10 bytes) at your “Input SM323” to “ON”. CP 340 will then send a telegram with a length of 10 bytes via the serial interface (LED “TxD” flashing). To repeat the send process, you must first switch bit 0.6 (REQ for P_SEND) to “OFF” and then to “ON” again.

Receive

If you send data from your communication partner, the data will be received by CP 340 in DB 20 if enabled. The destination you entered will be generated in FC12 at the labels “A0:” or “A1:”

PEW 0: To do this, switch bits 0.1 at your “input SM323” (enabling FC11 and FC12), 0.7 (EN_R for P_RCV) and 1.2 (selection of the target offset “2” in DB20) to “ON”.

The CP 340 starts to receive data via the serial interface (the “TxD” LED flashes).

Assignment of Output Wort (PAW4)

Bit 0.0: "Done" a successful SEND

Bit 0.1: "Error" a faulty SEND

Bit 0.2: "BIE" a SEND

Bit 0.4: "NDR" a successful RECV

Bit 0.5: "Error" a faulty RECV

Bit 0.6: "BIE" a RECV

Diagnosis

Operator mistakes, incorrect wiring of the serial interface or parameterization conflicts can cause errors.

Possible errors and the diagnosis messages are described in Section 8 of the operating manual.