

# SSW5/USB

S5-PLC to USB converter cable

700-750-0US13

700-750-1US13

## User Manual

Edition 2 / 09.03.2009 / HW1 and higher



Order number of manual: 900-750-0US13/en



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We have checked the content of this manual for conformity with the hardware and software described. Nevertheless, because deviations cannot be ruled out, we cannot accept any liability for complete conformity. The information in this manual is regularly updated. When using purchased products, please heed the latest version of the manual, which can be viewed in the Internet at [www.helmholz.de](http://www.helmholz.de), from where it can also be downloaded.

Our customers are important to us. We are always glad to receive suggestions for improvement and ideas.



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# 1 Safety Information

Please observe the safety information given for your own and other people's safety. The safety information indicates possible hazards and provides information about how you can avoid hazardous situations.

The following symbols are used in this manual.



*Caution, indicates hazards and sources of error*



*gives information*



*hazard, general or specific*



*Danger of electric shock*

## 1.1 General

The product is only used as part of a complete system.



*The operator of a machine system is responsible for observing all safety and accident prevention regulations applicable to the application in question.*



*During configuration, safety and accident prevention rules specific to the application must be observed.*



*Emergency OFF facilities according to EN 60204 / IEC 204 must remain active in all modes of the machine system. The system must not enter an undefined restart.*



*Faults occurring in the machine system that can cause damage to property or injury to persons must be prevented by additional external equipment. Such equipment must also ensure entry into a safe state in the event of a fault. Such equipment includes electromechanical safety buttons, mechanical interlocks, etc. (see EN 954-1, risk estimation).*



*Never execute or initiate safety-related functions using the operator terminal.*



*Only authorized persons must have access to the modules!*

## **1.2 Restriction of access**

The modules are open equipment and must only be installed in electrical equipment rooms, cabinets, or housings. Access to the electrical equipment rooms, barriers, or housings must only be possible using a tool or key and only permitted to personnel having received instruction or authorization. See also Chapter 0.

## **1.3 Information for the user**

This manual is addressed to users of the SSW5/USB cable. It is intended for use as an installation manual and reference work by the configuring engineer.

The SSW5/USB must be used only as a programming cable for connection to Siemens Simatic S5 controllers. The configuring engineer, user, and installing technician must observe the standards, safety and accident prevention rules applicable in the particular application. The operator of the automation system is responsible for observing these rules.

## **1.4 Use as intended**

The SSW5/USB cable must only be used as a communication system as described in the manual.

## **1.5 Avoiding use not as intended!**

Safety-related functions must not be controlled via the SSW5/USB cable.

## **1.6 Installation and Mounting**

The SSW5/USB coupler must be installed according to VDE 0100 IEC 364. Ambient temperature: 0 °C – 60 °C.



*Before you start installation work, all system components must be disconnected from their power source.*



*Danger of electric shock!*



*During installation, application-specific safety and accident prevention rules must be observed.*

## 2 System Overview

### 2.1 Application and function description

The SSW5/USB converter cable is for connection of a Simatic S5 CPU to a PC with a USB interface. For PCs that do not have a serial interface, the SSW5/USB cable can connect to the PLC via a virtual COM port.



*Only one SSW5/USB can be used per PC!*

A virtual COM port is set up during installation of the SSW5/USB. It can then be used by programming software, such as Siemens Step 5 Version 7.2x, Deltalogic Accon programming software or other programming systems for the Simatic S5.

Use of the SSW5/USB with visualization systems that can be connected to the S5 CPU is also possible.

### 2.2 Connections

#### S5-PLC interface 15-way Sub-D connector

Pin	S5
1	Shielding
2	- RxD
3	n.c.
4	n.c.
5	n.c.
6	+ TxD
7	- TxD
8	GND
9	+ RxD
10	GND
11	n.c.
12	GND
13	n.c.
14	n.c.
15	n.c.

### 2.3 Items supplied

SSW5/USB, 3m 700-750-0US13

or

SSW5/USB, 5m 700-750-1US13

CD with driver and instructions



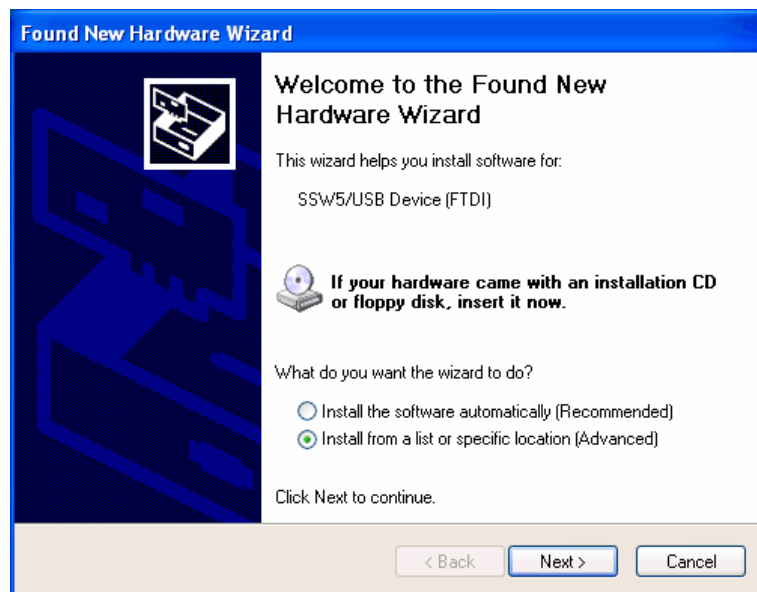
### 3 Installation of the USB driver

If a SSW5/USB is being connected to the PC for the first time, the operating system will try to install a suitable driver. This driver provides the interface between the USB interface and the operating system (Windows).

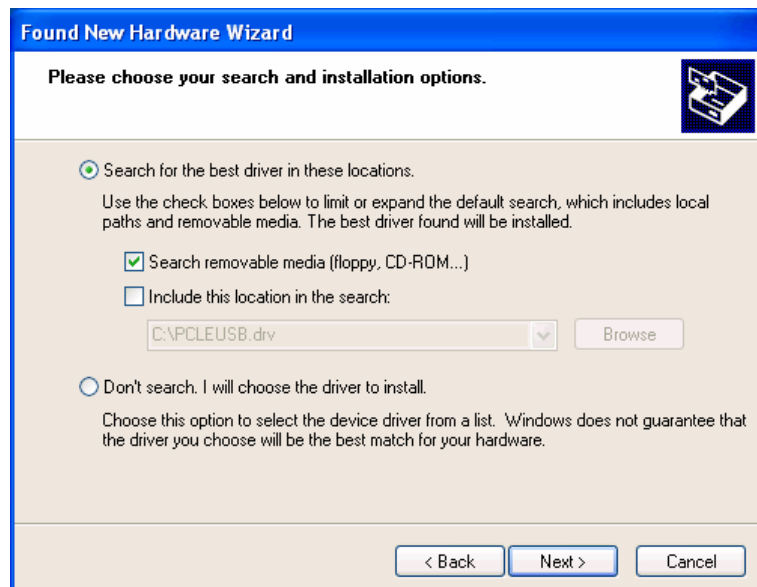
Moreover, the software for the virtual COM interface must be installed and set (see Chapter 4).

Initial installation of the USB driver can take some time and goes through the following steps:

- The operating system starts an installation wizard that performs the installation, which is largely automatic. Here it is necessary to specify that the source for the USB driver should not be ascertained automatically.



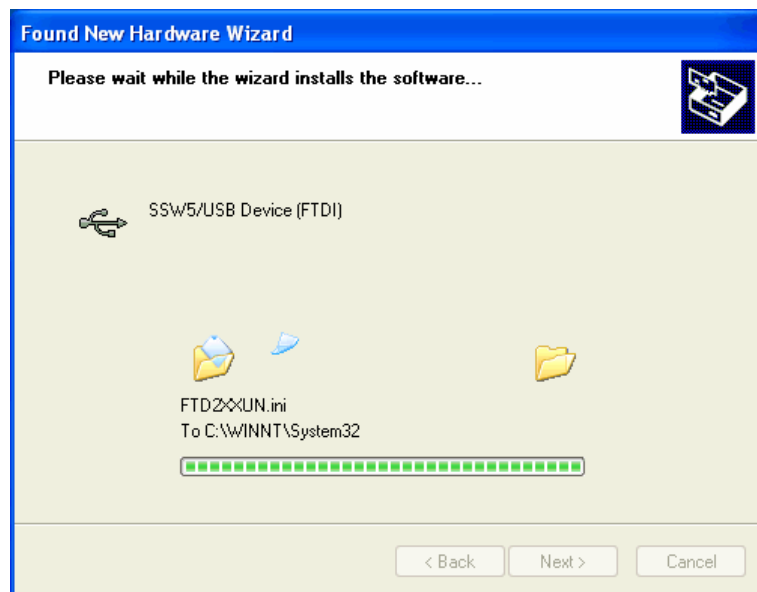
- The next step is a prompt to specify the location of the driver. It is generally enough to set a checkmark next to 'Search removable media...' and then to click the 'Next' button.



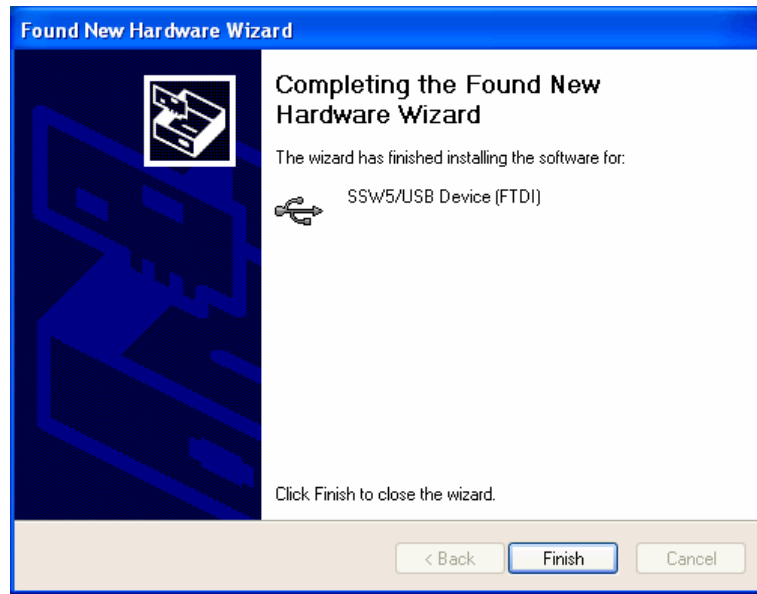
- The system now searches for the driver...



- If the SSW5/USB CD is inserted in a local drive, installation should start after a short time.



- After successful installation, the operation is completed by clicking the “*Finish*” button.



## 4 Installing a virtual COM port

The CD supplied with the SSW5/USB contains the setup for the virtual COM port software. Run the setup and follow the instructions given. The computer must be rebooted after you have installed the software.

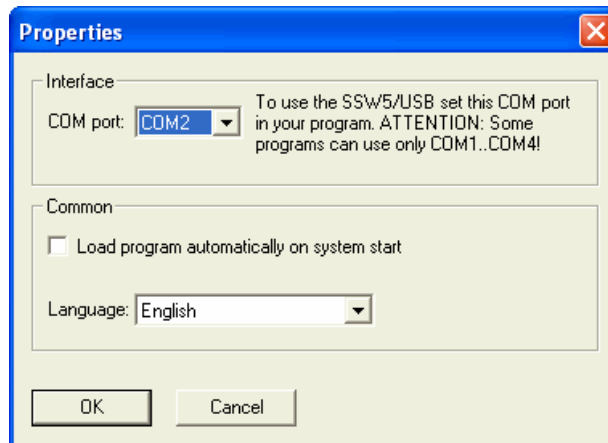
The program can be started via "Start / Programs / Systeme Helmholtz / SSW5-USB".

After you have started the program, you will see it in the info area.



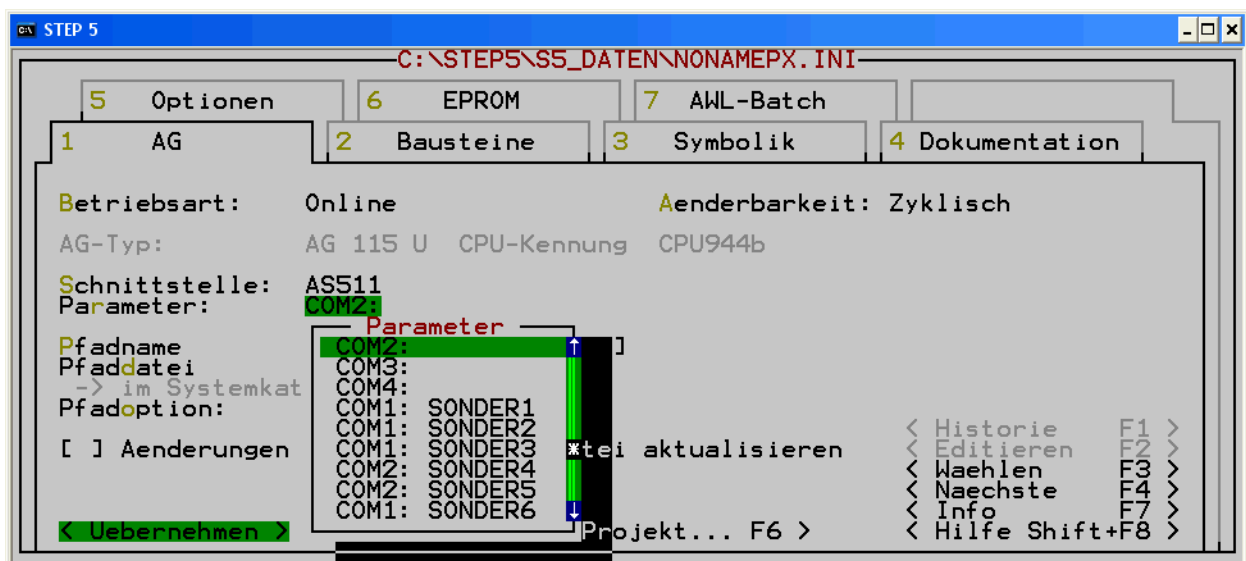
### 4.1 Settings for the virtual COM port

The COM port to be used by the SSW5/USB can be defined in the properties of the COM port driver.



The SSW5/USB has so far only been tested with Step 5 V 7.2x!

To use the SSW5/USB with Step 5 from Siemens, you should select a port between COM1 and COM4.



## 5 Appendix

### 5.1 Technical data

<b>Order number</b>	SSW5/USB, 3m	700-750-0US13
	SSW5/USB, 5m	700-750-1US13
<b>Dimensions</b>	70 x 45 x 18 mm (LxWxH) + cable	
<b>Weight</b>	Approx. 200 g	

#### S5-PLC interface

Type:	TTY, 20mA
Transmission rate:	9.6 Kbaud
Protocol:	AS 511
Pin:	15-way SUB connector

#### USB interface

Type:	USB 1.1
Transmission rate:	Full speed

#### Power supply

Voltage:	via USB 5V
Current consumption:	100 mA (typ.)

#### Permissible ambient conditions

Operating temperature:	0°C ... 60°C
Storage temperature:	-25°C ... 75°C
Degree of protection:	IP 20

#### Special features

Quality assurance:	according to ISO 9001:2000
Maintenance:	Maintenance-free (no battery, rechargeable or non-rechargeable)

## 5.2 Pin assignment

Pin	S5
1	Shielding
2	- RxD
3	n.c.
4	n.c.
5	n.c.
6	+ TxD
7	- TxD
8	GND
9	+ RxD
10	GND
11	n.c.
12	GND
13	n.c.
14	n.c.
15	n.c.

## 5.3 Further documentation

Siemens "Step 5" manuals

## Notes