SSW7-TS

Teleservice via the MPI-Bus

700-751-8VK21

User Manual

Version: 3 / 2005-11-29

HW: 1 / FW 3.0 and higher

Note:

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, from where it can also be downloaded.

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

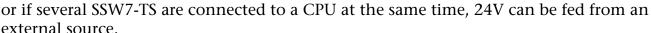Step and SIMATIC are registered trademarks of SIEMENS

Design

With the SSW7-TS, teleservice of a system can be performed via the MPI bus using standard commercial type modems. At the RS232 end, baud rates of 9.6 Kbaud to 115 Kbaud are supported.

The SSW7-TS has a 1.2 m long connecting cable, which can be directly plugged into the CPU socket of the programmable controller or at any other point in the MPI network.

The housing of the SSW7-TS contains a 9-way sub D connector whose pin assignment is designed for a standard modem cable for direct connection to a standard commercial type modem.

The SSW7-TS receives its power supply from the CPU via the MPI cable. If 24V are not available at the point of connection or if several SSW7-TS are connected to a CPU at the same time, 24V can be fed from an external source.

For teleservice of the SSW7-TS, standard commercial type modems that support the Hayes command set can be used.

We recommend the following modems for use with the SSW7-TS:

DIN-rail mounted modem, 56K analog	700-751-HSM11
DIN-rail mounted modem, 56K analog, SMALL	700-751-HSM21
DIN-rail mounted modem, ISDN	700-751-HSM02
Pocket modem, 56K analog V2	700-751-MDM06
Pocket modem, ISDN	700-751-MDM05
DIN-rail mounted modem, GSM	700-751-GSM02

The connection to the MPI bus can be extended with an additional cable. For that purpose, Systeme Helmholz GmbH offers the following products:

MPI bus extension cable, 5m	700-751-6VK11
MPI bus extension cable, 10m	700-751-6VK21
MPI bus extension cable, special length	700-751-6SO11

When extending the MPI bus, please follow the relevant configuring guidelines as defined in the documentation of your PLC.

For the SSW7-TS, a wall bracket, a DIN rail bracket (700-751-HSH01), and an S7-300 sectional rail bracket (700-751-PSH00) are available.

FM35x modules can not currently be parameterized with the SSW7-TS.

LED displays

The three LED s on the top of the device provide you with information about the operating status of the SSW7-TS. You can use them to locate sources of error quickly.

The LED s have three different states: Off, on, blinking. If the LED is off, none of the labeled states applies.

Upper LED off:	The adapter has no power or is faulty
Upper LED on:	The adapter is being powered with 24V and the processor is running
Center LED on:	The SSW7 has parameterized the modem correctly and registered in the MPI network
Lower LED on:	The SSW7 has established a connection
Lower LED blinking:	The SSW7 is transmitting data

If the SSW7-TS on the system is connected to the modem and the PLC, it will establish contact with the MPI bus as soon as the modem has been successfully initialized. The upper and center LED s should therefore light up after a short time.
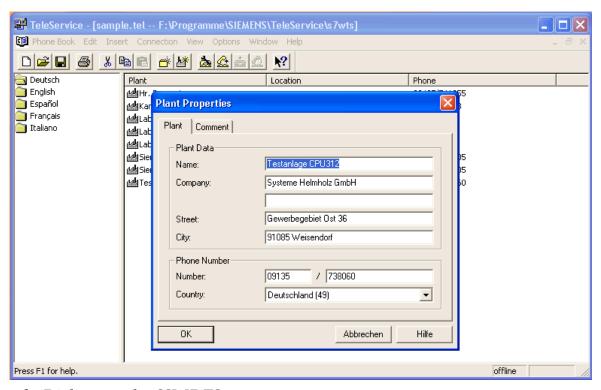
If only the upper LED lights up, either the modem has not responded to initialization, or the SSW7-TS has not joined the MPI bus.
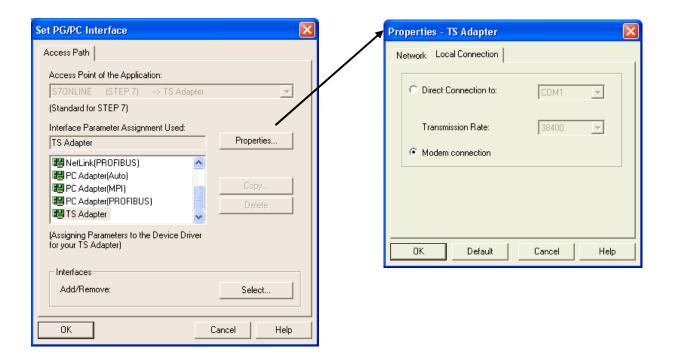
Parameterization

The SSW7-TS settings are always defined in the software used for communication with the programmable controller.

In most cases, you will also need an additional software module for your programming software, e.g. TeleService from Siemens (version 3.0 and later), to parameterize the SSW7-TS and operate the connection (telephone book of dial able systems).

Example: Setting up a system
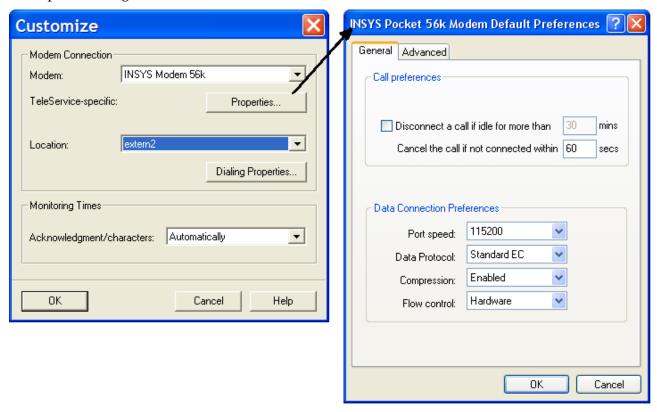

Example: Dialing up the SSW7-TS

Installing the local modem

If you have already installed a modem under Windows, you can also use this modem for teleservice.

Plug-and-play modems are automatically recognized by the PC and integrated in the system as soon as they are connected. The driver supplied with the modem is required for this. You can manually install modems without plug-and-play capability via the control panel under the "Telephone and modem options" in the "Modems" dialog box. Here again, you will need the driver supplied with the modem.

It should be possible to address the modem as soon as you have installed it on one of the COM interfaces of your PC. Select the installed mode in the parameterization of the programming software.

Example: Setting the local modem

For safety reasons, "Forced EC" error detection must always be activated.
In the case of a link without error checking, sporadic broken connections can occur!

To test your teleservice software and the modem on the PC, you can dial our SSW7-TS test system. The phone number can be obtained from our Support.
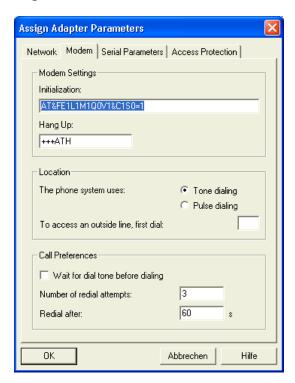
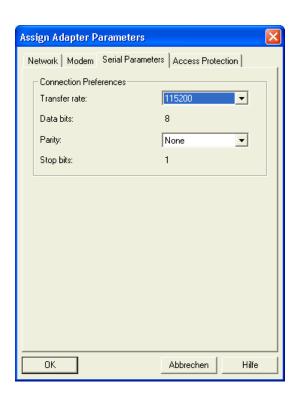## Installing and parameterize the modem in the system

The modem in the system is directly connected to the SSW7-TS. The SSW7-TS puts the modem in receive mode as soon as it is switched on and has established a link to the PLC. An initialization string is stored in the SSW7-TS for that purpose. This string can be changed with the software.

Parameterization can be performed both locally on the workstation (SSW7-TS in "direct link") or via a telephone connection (SSW7-TS in "modem connection").

If you have to adapt the init string, use the relevant command sequences given in the modem manuals or ask your modem manufacturer.

Example: Parameterize the SSW7-TS

The "PG_DIAL" and "AS_DIAL" functions for starting a call from an S7-CPU are currently not implemented.

Please consult the programming software manuals for further information.

The SSW7-TS can also be used as a normal "PC adapter" without the teleservice software. The SSW7-TS automatically detects the mode after power-on ("Modem operation" / "Direct link" / "PC adapter").

Modem setting

The modem connected to the SSW7-TS is automatically initialized on power-on or connection. During initialization, the initialization string that has been entered in the TeleService software is sent to the modem and a positive response ("OK") is awaited.

AT &F E1 L1 M1 Q0 V1 &C1 S0=1   *(default)*

AT	Introducing modem commands
&F	Load factory settings of the modem
E1	Echo of the ON command
L1	Volume level 1
M1	Loudspeaker ON
Q0	Feedback from the modem ON
V1	Feedback in plain text
&C1	DCD signal shows carrier connected
S0=1	only wait one ring

Please see the modem manuals for the appropriate commands.

Tested modems with init strings

DIN-rail mounted modem 56K	*default*
DIN-rail mounted modem 56K Small	*default*
Pocket Modem 56K, analog	*default*
DIN-rail mounted modem, ISDN *	AT#Z=123;AT&FE1L1M1Q0V1&C1S0=1
Pocket modem, ISDN Internet *	AT#Z=123;AT&F**B10**E1L1M1Q0V1&C1S0=1
Pocket modem, ISDN Profi *	AT#Z=123;AT&FE1L1M1Q0V1&C1S0=1
DIN-rail mounted modem, GSM **	AT+CPIN="0815";AT&FE1L1M1Q0V1&C1S0=1
ELSA MikroLink 56k (pro) / 56k Industrial	AT&FE1L1M1Q0V1&C1S0=1**+ES=3,2,4**
3Com/U.S. Robotics 56k	AT**&F1**E1L1M1Q0V1&C1S0=1
Westermo DIN-rail mounted modem TD-32	AT *(follow instructions in Westermo manual!)*
Westermo DIN-rail mounted modem ID-90	AT *(follow instructions in Westermo manual!)*
Siemens GSM modem TC35 **	AT+CPIN="0815";AT&FE1L1M1Q0V1&C1S0=1
ELSA Microlink ISDN *	AT$IMSN=0,"123";AT&FE1L1M1Q0V1&C1S0=2

* 123 is only an example! The HELMHOLZ ISDN TA is programmed to multipoint connection (default) on the S0 bus and the MSN must be configured.

** 0815 is only an example! Enter your four-digit PIN number here.

If you are using GSM applications, have your provider enable your SIM card for data transfer.

If the "DIN-rail mounted modem 56K" is used outside Europe, the following init string must be used:

AT**+GCI=*xx*;**E1L1M1Q0V1&C1S0=1

"*xx*" stands for the country code, which you will find in the user manual of the DIN-rail mounted modem.
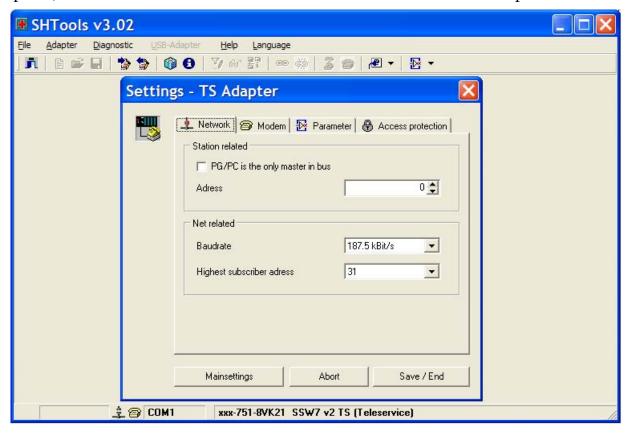The semicolon in the init string is obligatory!

If you are using an ISDN modem you must select a driver in the Teleservice software which supports protocol X.75.
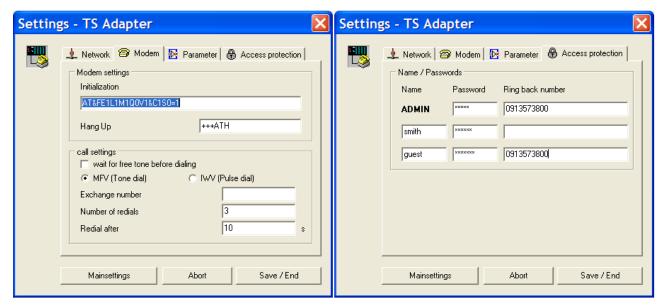
Connection possibilities:

	analog	ISDN	GSM
analog	yes	no	yes
ISDN	no	yes	yes
GSM	yes	yes	yes

SSW7-TS parameterization software

With the "SSW7 Tool V3", it is possible to pre parameterize an SSW7-TS with any computer, even if there is no TeleService software installed on that computer.

Once set, parameters can be stored on the computer in a file and transmitted to further SSW7-TS's.

The "SSW7 Tool V3" can be obtained from our download area on our Internet site www.helmholz.de.

Speed up driver for Win 2000 and XP

In direct mode the SSW7-TS can work with 115Kbaud. Therefore you have to install the Speed-up driver V3.0. The actual version is available at www.helmholz.de.

⚠ Is there an older high speed driver running you MUST close AND uninstall this before continuing!
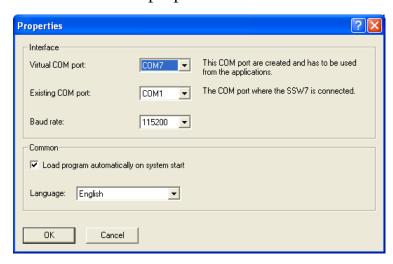
The Speed-up tool creates a new serial COM port. The driver brings the data transfer from the virtual to the physical COM port and vice versa.

After the installation start the driver via the symbol in the start menu. There is only an additional symbol in the systray.

Right click to symbol opens the context menu for the properties.

1.) Activate the new virtual COM port in the dialog box.

2.) set the COM port where the SSW7-TS is plugged in.

3.) Set the baud rate you want to use.

Select the „OK" button to activate the driver.

This new COM port has to be used from your applications now. For more details please see the documentation for SSW7 driver software.

Right click to symbol opens the menu - select „end" for deactivating the Speed-up tool.

Technical data

Order number	SSW7-TS 700-751-8VK21
Dimensions	105 x 53 x 29 mm (LxWxH)
Weight	approx. 180g (incl. MPI cable & connector)

MPI interface

Type:	RS485, isolated
Transmission rate:	19.2 kbps to 187.5 kbps
Cable:	1.2m, *no terminating resistors*
Connection:	Connector, SUB D 9-way

Communication interface

Type:	RS232, serial asynchronous
Transmission rate:	9.6 kbps to 115 kbps
Connection:	Connector, SUB D 9-way

Power supply

Voltage:	+24V DC ±25%, from the programmable control or external power supply (polarized)
Power supply:	30mA (type) / 45mA (max.)

Degree of protection	IP 30

Electromagnetic compatibility (EMC)

Interference emission	Class B to EN55022
Interference immunity on signal lines	±2kV acc. to EN61000-4-4
Noise immunity ESD	±6kV contact discharge EN61000-4-2 ±8kV air discharge EN61000-4-2
RF radiation fields	10V/m acc. to EN61000-4-3
Conducted RF interference	10V acc. to EN61000-4-6

Climatic conditions

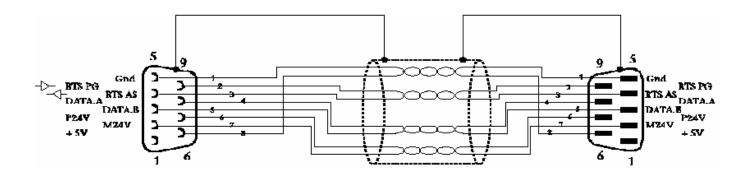|	
Temperature during operation	-20° C to +60°C
Temp. Storage/transport	-20° C to +60°C
Relative humidity operation	5% to 85% at 30°C (no condensation)
Relative humidity storage	5% to 93% at 40°C (no condensation)

Special features

Quality assurance	According to ISO 9001:2000
Maintenance	Maintenance-free (no battery)

Pin assignment

Pin	SUBD connector PC	SUBD connector MPI
1	DCD	n.c.
2	Rx	M24V
3	Tx	DATA.B
4	DTR	RTS AS
5	GND	0V (M5V)
6	DSR	n.c.
7	RTS	+24V
8	CTS	DATA.A
9	RI	RTS PG

Connecting cable

MPI extension cable (700-751-6VKx1):

PC to SSW7-TS (for direct operation on the PC):