compatible with you

SSW7-HMI

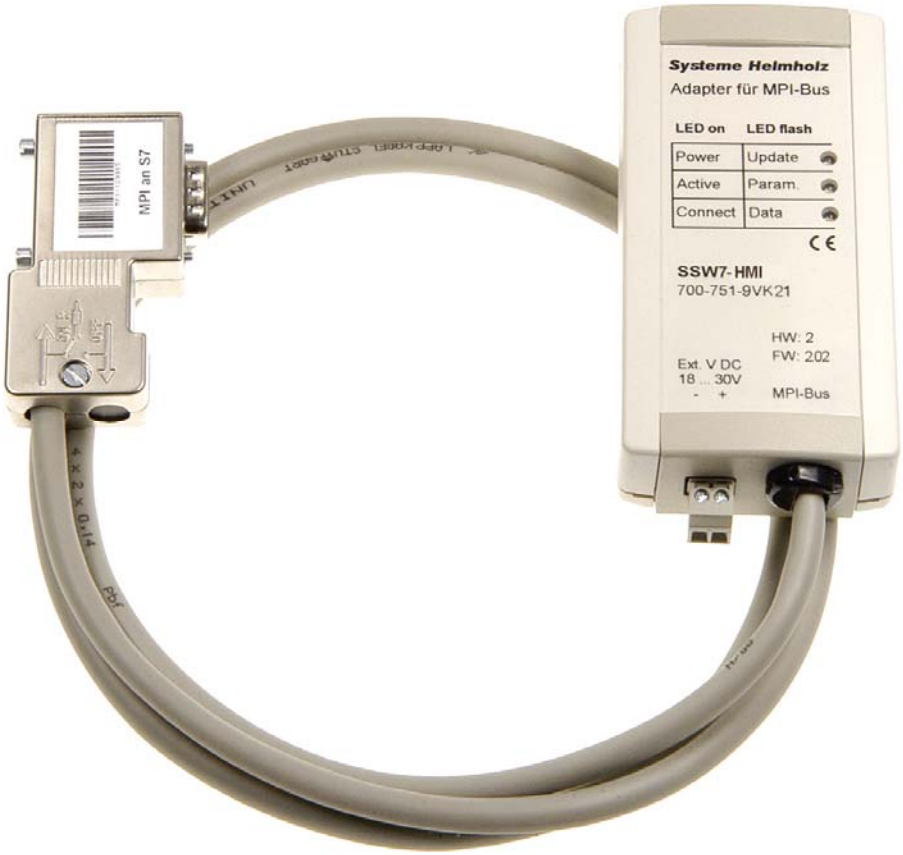
Adapter for MPI Bus with HMI Protocol

700-751-9VK21

User Manual

Version: 4 / 20.03.2009

HW 1 / FW 2.02 and later



Order number of manual: 900-751-9VK21/en

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Note:

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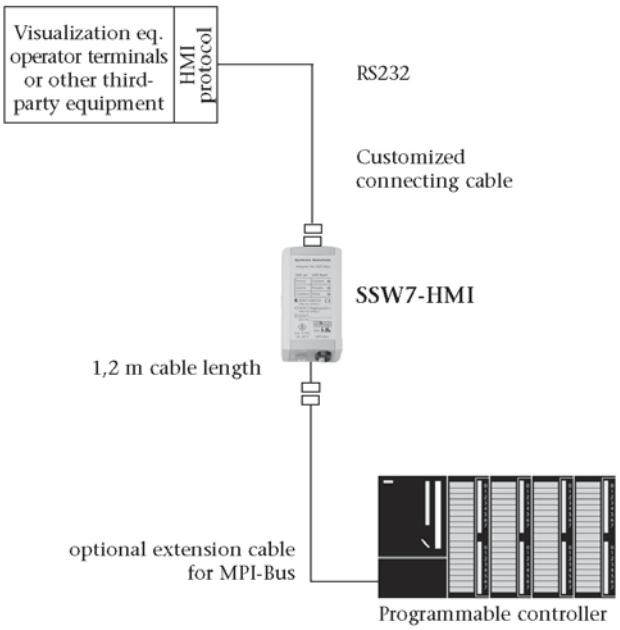
Design

The SSW7-HMI permits connection of operator terminals or visualization software from a serial interface (RS232 level, 4.8 ... 115 Kbaud) with an HMI protocol to an MPI bus (RS485 level, 187.5Kbaud).

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

A nine-way D-sub connector with a pin assignment suitable for a standard PC null modem cable is contained in the housing of the SSW7-HMI (cable is part of the scope of supply of the SSW7-HMI).

The SSW7-HMI receives its power supply from the CPU via the MPI cable. If 24V are not available at the point of connection or if several SSW7s are connected to a CPU at the same time, the 24V power supply can be fed from an external source.



The 24V connection intended for this purpose (green connector).

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

SSW7 extension cable, 5m	700-751-6VK11
SSW7 extension cable, 10m	700-751-6VK21
SSW7 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.

The SSW7-HMI and the extension cable do not contain *any* terminating resistors.

A standard rail bracket (700-751-HSH01) is available for the SSW7-HMI.



Transmission

The SSW7-HMI supports the Siemens HMI protocol PDK Version 2. Data bytes, marker, input and output bytes, counters, timers, market bits, and dates/times can be transmitted.

All function codes of the HMI protocol are supported (PDK Version 2).

The following extensions are implemented in the SSW7-HMI:

1. The function **set_baudrate** (131) also has the baudrates 56Kbaud (code: 0x05) and 115Kbaud (code: 0x06).
2. With the function **load_tool** (128) it is possible to redirect an existing connection to a new target address without having to use the function **unload_tool** (129). The serial baudrate is retained!



Please note that the SSW7-HMI requires a positive signal (ON) on the handshake line RTS and DTR! Otherwise it will not start communication on the MPI bus.

An existing link can be broken completely if the RTS and DTR lines are deactivated.



Multiple connections as described in PDK Version 3 documentation are not implemented in sthe SSW7-HMI at the moment.

Error codes

Please see the Siemens HMI documentation (PDK programming manual edition 2) for the error codes of the SSW7-HMI.

LED displays

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

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

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

Technical data

Order number	SSW7-HMI 700-751-9VK21
Dimensions	105 x 53 x 29 mm (LxWxH)
Weight	Approx. 180g (incl. MPI cable & connector)

MPI interface

Type:	RS485, electr. isolated
Transmission rate:	19.2 kbit/s or 187.5 kbit/s
Cable:	1.2m, *no terminating resistors*
Connection:	Connector, SUB D 9-way

Communication interface

Type:	RS232, serial asynchronous
Transmission rate:	4.800 bit/s to 115 kbit/s
Connection:	Connector, SUB D 9-way

Power supply

Voltage:	+24V DC ±25%, from the programmable controller or external infeed
Current consumption:	max. 70 mA

Degree of protection	IP 30

Electromagnetic compatibility (EMC)

Interference emission	Class B acc. to EN55022
Interference immunity on signal lines	±2kV acc. to EN61000-4-4
Interference 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

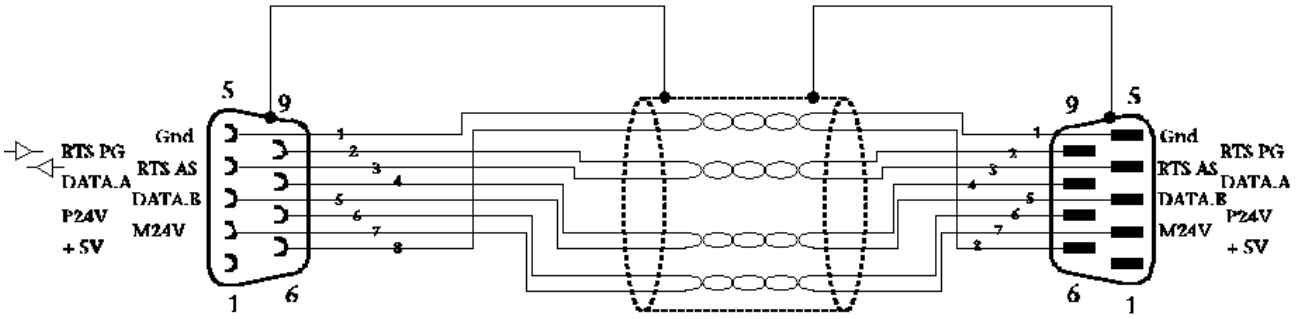
Quality assurance	Acc. to ISO 9001:2000
Maintenance	Maintenance-free (no battery)

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	+5V
7	RTS	+24V
8	CTS	DATA.A
9	RI	RTS PG

Connecting cable

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



PC to SSW7-HMI (700-751-7VKx1):

