SIEMENS

Koppelmodul (HART–Modem) für
SIMATIC PDM
Interface (HART modem) for
SIMATIC PDM

7MF4997–1DA

Betriebsanleitung
Operating Instructions

Interface (HART modem) for SIMATIC PDM

Overview

Congratulations on purchasing the interface. The interface allows you to communicate with HART instruments using a personal computer, the computer's serial interface and the respective software.

The interface requires no special installation, operates on low power for notebook compatibility, and is isolated and fully HART compliant. It draws power from the RS232 interface and requires no external power supply. The networks interface operates on as little as 2.0 mA at voltages as low as 4.0 VDC, which is well within the capabilities of most PC systems, including energy efficient notebook. The interface adheres to the EIA--RS232C standard, and supports hardware handshaking.

The interface is enclosed in a small, rugged plastic case, suitable for the industrial environment. The networks interface small size and low operating power allows it to attach directly to your computer's serial interface. No adapter cable is required.

Getting Started

1. Hardware and software requirements:

   The interface for SIMATIC PDM
   Computer with one or more RS232 serial ports
   Male 9--pin DB--9 connector on at least one serial port, or 25--pin DB--25 connector
   with DB--25 to DB--9 converter cable (converter cable not in the scope of delivery)
   Operating system software such as MSDOS V5.0 or greater that supports RS232 se-
   rial ports
   Software for communicating with HART instruments (e.g. SIMATIC PDM):

2. Check your package.

   Your interface package contains the following items:
   -- The interface
   -- Operating Instructions

If any of these items is missing or damaged, please contact your Siemens service partner.

Description of the Connectors and the Connector Cable

The networks interface has a female 9--pin DB--9 serial port connector on the side of the
computer, and a 2--pin terminal block receptacle on the side of the Connector Cable.
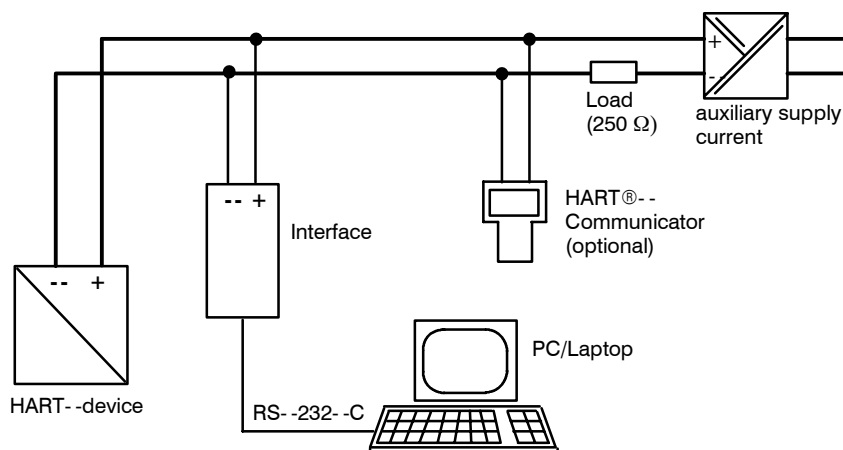
Installation of the interface

Attach the mating DB--9 connector on the interface to your computer's 9--pin serial port.
Secure the networks interface connectors by tightening the thumb--screws.
Some computers have only a DB--25, 25--pin serial port. You can use a short DB--25 to
DB--9 converter cable if you do not have a DB--9 connector on your computer.

You may have to assign your software to the COM port used by your interface.
The interface is transformer isolated and is polarity insensitive. Transformer isolation allows you to connect the interface across the current sense resistor or the across the field device. Do not connect the interface across the power supply; you cannot damage the unit, but communication cannot occur. Polarity insensitivity means that you may attach either one of the test clips to positive and negative poles. You do not have to check the direction of current flow before connecting the unit.

Technical Specifications

Electrical Specifications:

Power Supply:	No external supply required. System powered via RS232 inputs. Compatible with RS232 (evels from +/− 4V to +/−12V).
Supply Current:	I.5mA pro +/−4V inputs 4.0mA pro +/−12V inputs Power is drawn equally from all RS232 inputs, regardless of state. Supply current does not include current load on output pins.

Pin Connections:	
Computer	RS232 DB−9 connector
HART	2 Pin terminal block. Polarity insensitive termination.
Output Level:	Fully HART compliant. 0.5 +/− .IVpp trapezoidal wave bei 1200/2200 Hz.
Isolation:	1500VDC isolation between instrument and computer.

Software Requirements:

Operating System:	MSDOS Version 5.0 or higher, or equivalent OS that supports serial COM port.
Installation:	Set application software to COM port used by DB−9 serial port.

Environmental Specifications:

Temperature:	
Operating:	0° C to 50° C (32° F to 122° F)
Storage:	−40° C to 85° C (−40° F to 185° F)
Humidity:	0% to 95% relative humidlty (non−condensing).

Physical Dimensions:

Enclosure:	(49.5 x 33.3 x 15 mm), ABS enclosure suitable for industrial use.

Interface

Connector Cable:	twisted pair wire about 1,80 m to dual test clips. Polarity insensitive termination.

RS232 Pin Connections

	Pin	Impedance	Voltage Levels *	
Inputs:		Ohms	Mark/true	Spacelfalse
Transmit data		100K +		
TXD	3	% supply current	2 to 12 V	--12 to 0 V
Data terminal ready		% pwr supply current		
(DTR)	4	+ DSR load current	2 to 12 V	--12 to 0 V
		+ RXD if true load current		
		+ CD if true load current		
Ready to send		100K +		
(RTS)	7	% pwr supply current	2 to 12 V	--12 to 0 V
		+ CTS load current	--	
Ground	5	Ref	0 V	0 V
Outputs:				
Carrier detect		DTR thru 1 K if CD true	Output level as received from	
CD	1	11 K to --Vin if CD false	DTR	
Receivedata		DTR thru 1 K if RXD true	Output level as received from	
RXD	2	11 K to --Vin if RXD false	DTR	
Data set ready		DTR thru 1K	Output level as received from	
DSR	6		DTR	
Clear to send		RTS thru 1K	Output level as received from	
CTS	8		RTS	
Receiver RI	9	Not used	Not used	

"At least one input must exceed +/--4V to power the unit. Inputs must not exceed +/--12V, and must be current limited to +/--10mA.

% pwr supply current is shared by the 3 input pins if the absolute value of their voltages are equal, or by one pin if the absolute value of it's voltage exceeds the others.

Vin is a negative internally generated voltage.