Measuring and controlling products for heating industry



• JSD 600

programmable unit for data collection

• MR51D/C two and three-state regulator

• MR51E equiterm regulator

MR51P
flowmeter

Programmable regulators for electro-heating devices

• R101

programmable regulator for simple processes

R251
 programmable regulator for
 complicated processes

 R500 multiband programmable regulator

Accessories and converters



• HM01

HART modem for RS232

• FR01 conventer 0-20 mA to 4-20 mA

• **IRPS** conventer RS232 to current loop

PT05
conventer RS232 to TTL

Development and manufacture: SMART, spol. s r. o. Purkyňova 45, 612 00 Brno www.smartbrno.cz

Smart Systémy Měřicí, Analytické a Regulační Techniky

HM02 HART-modem to USB

INSTRUCTION MANUAL



Function of the modem

The modem is connected to PC via USB port through which it is powered as well. Operating SW creates in the computer virtual serial port whereby the application program communicates with connected periphery.

Modem HM02 is mounted in a plastic case, on the USB side it has an A-type connector and on the HART side there are two conductors with isolated measuring hooks. The port on the HART side is symmetrical and it does not depend on polarity. Colored labels of hooks does not make any difference.

The driver has to be installed for each used USB port separately.

Connection of the HART modem





HART-modem and Win 98SE

Switch on the computer and then connect PC with HART modem via USB cable. The screen below will appear:



Select "Search for the best driver for your device" from the options available and then click "Next" to proceed with the installation.



Check the box next to "Specify location" and uncheck all others.



Click "Browse" and select a directory in which the VCP driver of FTDI is located (e.g. this computer/C:/VCPDrivers) and click OK.



The chosen directory is shown in the dialog box. Now click NEXT.



Click NEXT and click FINISH.

Now several similar dialog boxes will be shown and subsequently closed after a while.

Installation is finished successfully.



Restore Defaults Advanced... OK Cancel Select by mouse or keyboard the row (USB serial port) so it is marked and click the right mouse button on the selection PROPER-TIES - PORT SETINGS and ADVANCED, and set it according to the pictures.

-

-

•

-

•

	Auvaliced settings for comp	· 😐
	COM Port Number: COM3 🔹	OF
JSB Serial Port (COM3) - Properties	USB Transfer Sizes	
General Port Settings Driver Resources	Select lower settings to correct performance problems at low baud rates. Select higher settings for faster performance.	Defaults
USB Serial Port (COM3)	Receive (Bytes): 256	
Device type: Ports (COM & LPT)	Transmit (Bytes): 256 💌	
Manufacturer: FTDI Location: on USB High Speed Ser	BM Options Miscellaneous Options	
C Device status	Select lower settings to correct response problems. Senal Enumerators V Latency Timer (msec): 10	
This device is working property. If you are having problems with this device, click Troubleshooter I start the troubleshooter.	Timeouts Cancell If Power Off	
	Minimum Read Timeout (msec): 0 Set H15 Un Llose 1 Disable Modern Cirl At Startup	
Troubleshoot	Minimum Write Timeout (msec): 0	
Device usage:		
Use this device (enable)		
OK	Cancel	

Open the "HARDWARE - Device Manager" tab and select "View devices by type". Then by clicking on + next to the Ports row the sub menu Ports will be opened, where at the end the USB serial port is stated.

HART-modem and Win XP

Switch on the computer and then connect PC with HART modem via USB cable. The screen below will appear:



Select "Install from list or given location" from the options available and then click "Next" to proceed with the installation. Select a directory in which the VCP driver is located (e.g. E:/CDM 2.00.00) and click OK.



box. Then click OK, NEXT and FINISH to complete the installation.





Click Frish to close the wixerd.

USB Serial Converter

second step the COM-USB port will be installed similarly.



For successful communication of the application following parameters has to be set: number of COM port, transfer rate, control of data flow, parity and number of stop bits. These parameters are set in the Device Manager which can be opened by using a key shortcut which is WIN and PAUSE key. For successful communication of the application following parameters has to be set: number of COM port, transfer rate, control of data flow, parity and number of stop bits.

System Properties	?×
General Device Manager Hardware Profiles Performance	
C View devices by type C View devices by connection	
Keyboard Montors Montors	
Motise MutiloController Proverse Research (Controller) Proverse Research (Controller)	
Grow a LP1 Grow a LP1 Ports (LDM a LP1) POI Serial Port (LDM1) POI Serial Port (LDM2) POI Serial Port (COM2) POI Serial Port (COM2)	
⊕ W Serial Port (CUM4) ⊕ W Sound, index and gene Controllers ⊕ System devices ⊕ ⊕ ⊕ ↓ ⊕ ↓ ⊕ ↓ ↓ ↓ ⊕ ↓ ↓ ↓ <t< th=""><td>-</td></t<>	-
Properties Refresh Remove Print	
ОКС	ancel

These parameters are set in the Device Manager which can be opened by using a key shortcut which is WIN and PAUSE key. Open the "HARDWARE – Device Manager"

tab and select "View devices by type". Then by clicking on + next to the Ports row the sub menu Ports will be opened, where at the end the USB serial port is stated: Select by mouse or

keyboard the row (USB serial port) so it is marked and click the right mouse button on the selection PROPERTIES -PORT SETINGS.

There select the number of the COM port, which

USB Se	rial Port (C	OM3)	Properties		? ×
General	Port Settings	Driver	Resources		
	<u>B</u> its per second:	9600			- I
	<u>D</u> ata bits:	8			J
	<u>P</u> arity:	None		1	- I
	<u>S</u> top bits:	1		1	J
	Elow control:	None		F	-
	<u>A</u> dvanced		<u>R</u> e	store Del	aults
			0	K	Cancel

will be used for access to the application (if you chose for example COM3, your software will communicate with the application through port COM3). Then click OK several times and setting of COM port properties will be successfully finished.

select		
es by	Advanced Port Settings	<u>×</u>
by next	COM Port Number: COM3	OK
menu be	USB Transfer Sizes	Cancel Defaults
	Select higher settings for faster performance	
t is	PX (Bytes): 256	
use or	TX (Bytes):	
e row port) dand right n on ction S - GS	BM Features Select lower settings to correct response problems. Latency (msec): 10 💌	
t the	Disable PNP 🔽	
the which		

HART-modem and Win 2000

Switch on the computer and then connect PC with HART modem via USB cable. The screen below will appear:



Select "Find proper driver" from the options available and then click "Next" to proceed with the installation. Select a directory in which the VCP driver is located (e.g. this computer/C:/CDM2.00.00) and click OK.



The chosen directory is shown in the dialog box. Then click OK, NEXT and FINISH to complete the installation.





Installation of the converter is finished and in second step the COM-USB port will be installed similarly.

Found New Hardware Wizard	
Install Hardware Device Drivers A device driver is a software program that enables a hardware device to work with an operating system.	
This wizard will complete the installation for this device:	
A device driver is a coftware program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the	
installation click Next. What do you want the wizard to do?	
 Search for a suitable driver for my device (recommended) Display a list of the known drivers for this device so that I can choose a specific driver 	
< Back Next > Cancel	

und New Hardware Wizar





For successful communication of the application following parameters has to be set: number of COM port, transfer rate, control of data flow, parity and number of stop bits. These parameters are set in the Device Manager which can be opened by using a key shortcut which is WIN and PAUSE key. Open the "HARDWARE – Device Manager"

Advan

COM

<u>V</u>ew | ← → | @ 🖬 😭 | 🕺

a whot Hub

System board
 System board
 Logacy Audio Codecs
 Logacy Audio Drivers
 Logacy Video Capture Devices
 Logical Disk Manager
 Media Control Devices

USB Serial Converter

Intel(R) 82865G Graphics Controller Intel(R) 82865G Graphics Controller Intel(R) 82865G/PE/P Processor to I/O Controller - 2570 Realtek AC'97 Audio

tab and select "View devices

by type". Then by clicking on

+ next to the Ports row the

sub menu Ports will be

opened, where at the end the

USB serial port is stated.

Intel(R) 82801EB LPC Interface Controller - 2400
 Intel(R) 82801EB PCI Bridge - 244E
 Intel(R) 82801EB PCI Bridge - 244E
 Intel(R) PRO/100 VE Network Connection
 Realtek RTLB139/810x Family Fast Ethernet NIC

Intel(R) 82801EB SMBus Controler - 24D3

Totel(R) 82801EB Libra ATA Storage Controllers

Thte(R) 82301EB Urs ATA 300ege Controlers Thte(R) 82301EB Urs ATA 300ege Controlers Thte(R) 82301EB Urs Universal Host Controler - 24D2 Thte(R) 82301EB USB Universal Host Controler - 24D4

🕰 Intel(R) 82801EB US8 Universal Host Controller - 24D7

Controller - 24DE



Select by mouse or keyboard the row (USB serial port) so it is marked and click the right mouse button on the selection PROPER-TIES - PORT SETINGS and ADVANCED.

	L	JSB Seria	Port (COM3)	- Propertie	es				? ×	
Cancel		General	Port Settings	Driver					_ 1	
!!	1			<u>B</u> its per se	econd:	9600	_	•		
e appil-				<u>D</u> at	a bits: 🛛	8		•		
ntrol of				ļ	Parity:	None	_	•		
op bits.				<u>S</u> to	p bits:	1		•		
Device				Elow c	ontrol:	None	_	•		
using a					Adu	mand [Post	oro Dofaul		
anader"				L	Bav	ancea	<u>n</u> eso	ore Deraul		
ced Settings f	or COM3								 ? ×	1
4 Port Number:	СОМЗ	-								
5B Transfer Size	s									
Select lower settings to correct performance problems at low baud rates. Select higher settings for faster performance.							Defau	ults		
Receive (Bytes):		256	•							
Transmit (Bytes):		256	•							
d Options				Miscella	neous Oj	ptions				
Select lower setti	ings to correc	st response p	problems.	Serial E	Enumerat	or	•			
Latency Timer (m	isec):	10	•	Serial F Cancel	Printer Ilf Power	r Off				
imeouts				E vent l	On Surpr	ise Removal				
Minimum Read T	imeout (msec	:): 0	•	Set RT Disable	5 On Clo e Modem	ose Ctrl At Startup				
Minimum Write T	imeout (msec	1	•							