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.



Serial Port (COM3) - Properties	
neral Port Settings Driver Resou	rces
Bits per second:	9600
Data bits:	8
Parity:	None
<u>S</u> top bits:	1
Elow control:	None
Ad	vanced
	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.

	Advanced Settings for COM3	? 🛛
USB Serial Port (COM3) - Properties General Port Settings Driver Resources USB Serial Port (CDM3) Device type: Ports (COM & LPT) Manufacturer: FTDI Location: on USB High Speed Ser Device istatus This device is working properly. If you are having problems with this device, click Troubleshooter start the troubleshooter. Troubleshooter.	Select lower settings to correct response problems. Latency Timer (msec): Timeouts Minimum Read Timeout (msec): 0 V	OK Cancel Defaults
Device usage: Use this device (enable)	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 Finish to close the wizard.

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	
View devices by type C View devices by connection	
🗈 🎲 Keyboard	<u> </u>
🗈 🔁 🎱 Modem	
in	
HutilOController	
Matalocontoller Matalocontoller Matalocontoller	
Ports (COM & LPT)	
Communications Port (COM1)	
PCI ECP/EPP Port (LPT1)	
PCI Serial Port (COM2)	
USB Serial Port (COM4)	
CSB Serial Port(COM4) Sound, video and game controllers	
🗄 🕰 Universal Serial Bus controllers	
🗄 🚔 Universal Serial Bus controllers	
	<u> </u>
Properties Refresh Remove Print	
	_
OK Ca	ncel

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

JSB Se	rial Port (Cl	DM3)	Properties		?	X
General	Port Settings	Driver	Resources	1		
	<u>B</u> its per second:	9600			-	
	<u>D</u> ata bits:	8		1	-	
	<u>P</u> arity:	None		1	-	
	<u>S</u> top bits:	1		1	-	
	<u>F</u> low control:	None]	-	
	Advanced		<u>B</u> e	estore De	faults	
			(эк.	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	Advected Ded Cattors	
es by	Advanced Port Settings	×
n by next s row	COM Port Number: COM3	OK Cancel
menu be ere at	USB Transfer Sizes Select lower settings to correct connection problems.	Defaults
USB	Select higher settings for faster performance.	
t is	PX (Bytes):	
use or e row	TX (Bytes): 256	
port)	-BM Features	
right	Select lower settings to correct response problems.	
n on ction	Latency (msec):	
S - GS.	- Options	
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 er an operating system.	nables a hardwa	ire device to work	with
This wizard will complete the installation for t			
needs driver files for your new device. To loo installation click Next.			1001/78
What do you want the wizard to do?			
Search for a suitable driver for my dev	vice (recommen	ded)	
 Display a list of the known drivers for driver 	this device so t	nat I can choose a	specific
	< Back	Next >	Cancel

ind 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

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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)	- Properti	ies			?	Ľ×Ľ
Cancel		General	Port Settings	Driver					, 1
onnli				<u>B</u> its per s	econd:	9600	_	•	
e appli- be set:				<u>D</u> a	ta bits:	8		•	
ntrol of					Parity:	None		•	
p bits.				<u>S</u> tr	op bits:	1		•	
Device using a				<u>F</u> low o	control:	None		•	
SE key.				[<u>A</u> d∨	anced	<u>R</u> est	ore Defaults]
anager"									
<u>_ 0 ×</u>									
	50140								 ? ×
ced Settings f	UF CUM3							_	<u>.</u>
I Port Number:	СОМЗ	•						OK	
5B Transfer Size	\$							Cancel	
Select lower setti Select higher set			ce problems at low ce.	v baud rates.				Defaults	:
Receive (Bytes):		256	•						
Transmit (Bytes):		256	•						
d Options				Miscell	aneous O	ptions			
Select lower setti	ngs to corre	ct response p	oroblems.		Enumera	itor	V		
Latency Timer (m	isec):	10	•		Printer el If Powe	er Off			
imeouts					On Surp TS On Cl	rise Removal			
Minimum Read T	imeout (msei	c): 0	•			n Ctrl At Startup			
Minimum Write T	imeout (msec	: 0	•						