

**RS232 HART® Modem
 (HM-RS232-ISO)
 User Manual**



Introduction

The RS232 (Serial) HART Modem (HM-RS232-ISO) provides the physical connection required for software to communicate with wired HART devices/networks. It is suitable for all operating systems.



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Installation

Note: No software drivers need to be installed for RS232(Serial) HART Modems.

Step 1) Connect Modem to RS232 COM Port

Connect the HART Modem to a free DB9 Serial Port (COM Port). Alternatively, you can connect the HART modem to a DB25 serial port using a DB25 to DB9 adapter (not supplied). Make a note of the COM port number you have connected HM-RS232-ISO to. If you are unsure and are using a Windows operating system, go to Start → Settings → Control Panel → System → Hardware → Device Manager → Ports (COM & LPT). Listed is all the COM ports Windows is configured for. Make a note of the COM port numbers displayed, probably you will only have COM1 and COM2, but you may have more. You will need these numbers later so you can try them all until you establish which COM port number you connected HM-RS232-ISO to.

Step 2) Connect to HART device/network

The modem can be connected in one of two ways: across the loop load resistor (A – B) or across the HART transmitter terminals (C – D). See the relevant Figure 1a, 1b or 1c below.

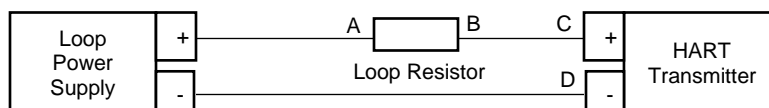


Figure 1a. Loop Powered HART Transmitter Connection

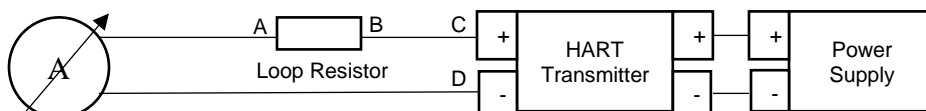


Figure 1b. 4-Wire HART Transmitter Connection

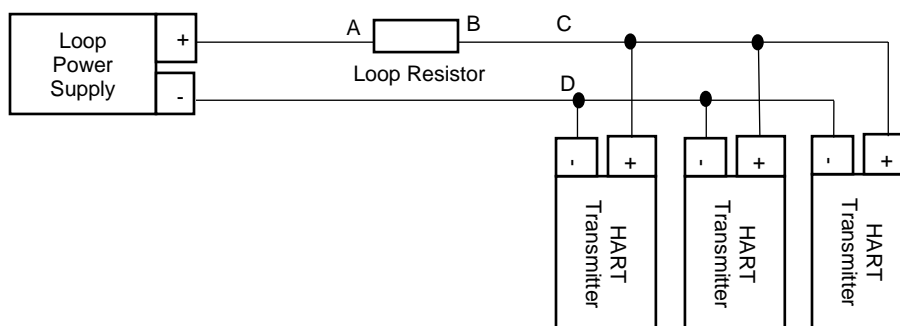


Figure 1c. Multi-drop HART Transmitter Connection

Step 3) Power the HART device/network

No external power sources are required for the Serial HART Modem (HM-RS232-ISO) as power is derived from the PC's RS232 serial port. However, as shown in Figures 1a, 1b and 1c (above) the HART device should be powered as per the manufacturer's instructions.

Step 4) Connection Test Software (Optional Step)

The “HM Test” is included on the installation CD to provide a quick and easy way to test that you can communicate with your HART device. There are two versions of HM Test, Windows and Windows CE. The Windows version can be downloaded from http://www.hart-expert.co.uk/wp-content/uploads/HART_Modem_Test_Windows.zip and Windows CE from http://www.hart-expert.co.uk/wp-content/uploads/HART_Modem_Test_Windows_CE.zip

Launch the program HM Test from the CD or from the installed icon. Click the “Set COM Port” button and select the COM port number that you noted in Step 1. Then select “Poll HART Network” to connect to a HART device. The program sends HART Command 0 to determine what transmitters are connected to the loop. The “Status” box will indicate successful (or otherwise) communication to the HART device. If the test failed click the button “COM Troubleshooter” for help, or consult the following “Troubleshooting” section of this manual.

Step 5) Set the COM port in your HART configuration software

Open your HART configuration software and with reference to the supplier’s literature, set the communication port to the COM port number noted in step 1.

You are now ready to configure your HART devices. You are also invited to try our HART Communicator software free for 10 days, please see <http://www.hart-expert.co.uk/online-shop/hart-communicator-software-free-10-day-trial-windows-pcs>

Troubleshooting

Verify the following:

1. COM port number in your HART configuration software is set to the Serial Port (or COM Port number) the HART Modem is connected to (step 5)
2. Loop power supply is on (Step 3)
3. Loop resistance is between 250 ohms and 1Kohms
4. Loop current is within HART limits
5. If multi drop configuration, all transmitters in the loop have unique addresses
6. The HART Modems HART connection is across the loop resistor or across the transmitter terminals (see diagrams in step2)
7. The HART Modems RS232 connector is seated firmly in the PC’s RS232 connector

Warranty

The HART Modem is warranted for 1 year for materials and workmanship. Contact HART Expert Ltd (UK) or ProComSol Ltd (USA) if having trouble. In the unlikely event that you will need to return a modem for a repair/replacement, an RMA (Return Material Authorization) number from HART Expert or ProComSol is required for all returned items.

Specifications:**Enclosure**

Material	High strength ABS Plastic
Dimensions	70mm x 51mm x 20mm
Total Unit Weight	136 g

Cables

HART Cable Length	1.2 m
HART Cable Connectors	Mini-Grabber
USB Cable Length	0.5 m
USB Cable Connector	RS232 Female

HART

Interface	Capacitive and transformer coupling
Output	600 mVpp
Leakage	< 10 uA
Isolation Voltage	1500 Vdc
Connections	Across loop resistor or HART field device
Specifications	HART 4, HART 5, HART 6, HART 7, HART Physical Layer Spec HCF_SPEC-54
HART Foundation	Registration Number L2-06-1000-305

Computer

Operating System	All operating systems are supported
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RS232

Power	RS232 port provides power to unit
Current Draw	17mA

Environmental

Operating Temperature	0 deg.C to 50 deg.C
Storage Temperature	-40 deg.C to 85 deg.C
Humidity	0% to 99% (non-condensing)

Compliances

CE Certification	EN 61326 (EMC)
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Contact Information

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