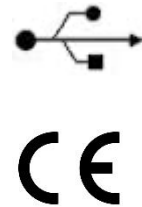


USB HART® Modem  
(HM-USB-ISO)  
User Manual



**Introduction**

The USB HART Modem (HM-USB-ISO) is designed to connect PC's to HART Networks so that application software can configure, monitor, and document HART based instrumentation.

**Installation**

**Step 1) Install Software Drivers**

Before using HM-USB-ISO a USB Virtual Serial Port Driver must be installed on the PC, one is supplied on the enclosed CD. Alternatively it can be downloaded using <http://www.hart-expert.co.uk/wp-content/uploads/USB HART Modem Virtual Serial Port Driver.zip>

If using the CD insert it into your MS Windows PC and then the USB Virtual Serial Port driver will install automatically (if "AutoPlay" is enabled on your PC). If it doesn't install automatically run "setup.exe" on the CD.

**Step 2) Connect HM-USB-ISO**

Once the driver is installed, you can connect the HM-USB-ISO to the USB port on your PC. See the relevant section below based on your PC's operating system.

**a) Windows XP**

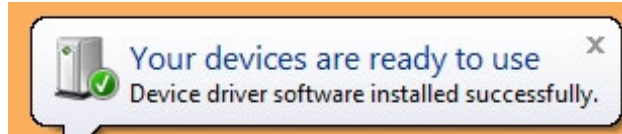
After the HM-USB-ISO is connected and the New Hardware Found wizard is finished, the following will appear at the bottom of the screen:



Note: A completion message may not appear on some systems.

## b) Windows Vista and Windows 7

After the HM-USB-ISO is connected and the New Hardware Found wizard is finished, the following will appear at the bottom of the screen:



Note: A completion message may not appear on some system.

### Step 3) COM Port Assignment

After installing, and with the HM-USB-ISO still connected to the PC, go to Start → Settings → Control Panel → System → Hardware → Device Manager → Ports, to see what com port number was assigned to the modem by the Windows operating system. The port labelled “USB Serial Port” is the assigned port.

This port assignment can be changed by the user. From the “Device Manager” menu, select the USB Serial Port you wish to change. From the “Properties” page, select “Port Settings”. Then select “Advanced”. The COM port number can be set in the range 1-256.

### Step 4) HART Connections

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.

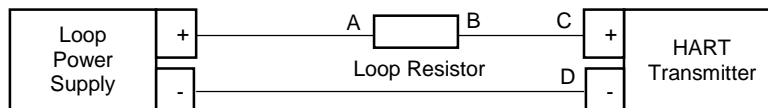


Figure 1a. Loop Powered HART Transmitter Connection

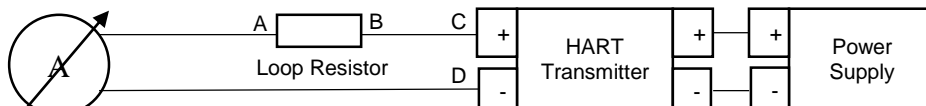


Figure 1b. 4-Wire HART Transmitter Connection

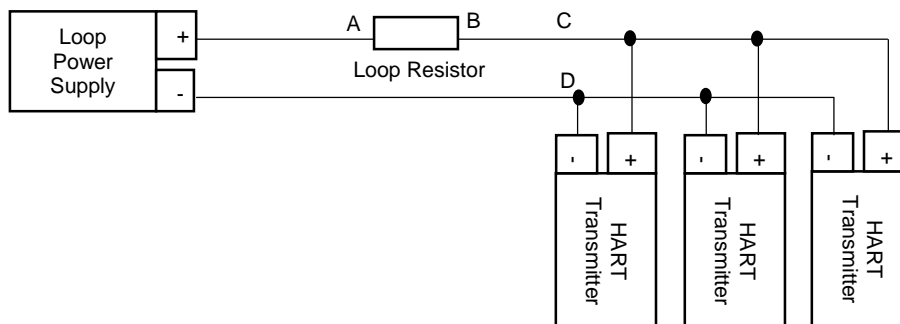


Figure 1c. Multi-drop HART Transmitter Connection

**Step 5) Power**

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

**Step 6) Connection Test Software (Optional Step)**

The program "HM Test" is included on the installation CD to test the connection and COM port configuration of the HM-USB-ISO, it can also be downloaded from [http://www.hart-expert.co.uk/wp-content/uploads/HART\\_Modem\\_Test.zip](http://www.hart-expert.co.uk/wp-content/uploads/HART_Modem_Test.zip)

Launch the program from the CD or from the installed icon. Enter the COM port number that was assigned to the modem by Windows. 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 operation of the HM-USB-ISO in your system. Consult the "Troubleshooting" section of this manual if the test fails.

**Troubleshooting**

Verify the following:

1. COM port number in application is the HM-USB-ISO COM port number.
2. Loop power supply is on.
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. HM-USB-ISO's HART connection is across loop resistor or across transmitter terminals (see above diagrams)
7. HM-USB-ISO's USB connector is seated firmly in the PC's USB connector.

**Warranty**

The HM-USB-ISO 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	85 g

**Cables**

HART Cable Length	1.2 m
HART Cable Connectors	Mini-Grabber
USB Cable Length	0.5 m
USB Cable Connector	USB Type A

**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 L2-06-1000-070

**Computer**

Operating System	Windows 32 and 64 bit versions: NT, 2000, XP, Vista, 7, 8, 8.1, and 10
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**USB**

Specifications	USB 1.1, USB 2.0, backward compatible with USB 3.0 and SS USB
Power	USB port provides power to unit
Current Draw	20mA

**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**

Supplied by HART Expert Ltd [www.hart-expert.co.uk](http://www.hart-expert.co.uk)

Produced by ProComSol Ltd [www.procomsol.com](http://www.procomsol.com)

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