

HM-USB-PWR User Manual

Introduction

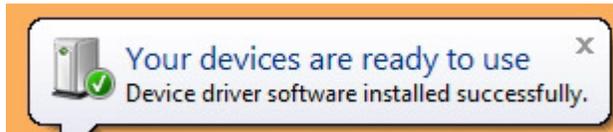
The HM-USB-PWR HART[®] Modem is designed to connect PC's to HART networks. Application software can then configure, monitor, and document HART based instrumentation. The power supply feature can also power HART transmitters.

Software Drivers

Before use, a USB Virtual Serial Port must be installed on the PC. Insert the enclosed CD into your PC. The USB Virtual Serial Port driver should install automatically. Once the driver is installed, you can connect the HM-USB-PWR to the USB port on your PC.

Windows

After the HM-USB-PWR 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.

COM Port Assignment

After installing, and with the HM-USB-PWR 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 labeled "USB Serial Port" is the assigned port.

Alternatively, if you click on the "Your devices are ready to use" message, the assigned COM port will be listed.

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 can be set in the range 1-256.

Operating Modes

Three different operating modes are available - Power + Modem Modem Only, and Power Only. Each requires different cable setups.

Power + Modem

Connect the supplied HART cable to the "Modem + Power" connector on the HM-USB-PWR. The 24Vdc LED should illuminate.

Connect the Red connector to the positive (+) terminal of the HART Transmitter. Connect the Black connector to the negative (-) terminal of the HART transmitter. The

HART Loop resistor is built-in to the modem so an external resistor is not required for this mode.

Modem Only

Connect the supplied HART cable to the “Modem Only” connector on the HM-USB-PWR. The 24Vdc LED should be off.

Connect the Red connector to the positive (+) terminal of the HART Transmitter. Connect the Black connector to the negative (-) terminal of the HART transmitter. Note that the HART transmitter requires an external power supply and loop resistor in this mode.

This mode is useful for communicating with WirelessHART devices that are battery powered.

Power Only

Connect the supplied HART cable to the “Modem + Power” connector on the HM-USB-PWR. The 24Vdc LED should illuminate.

Connect the Red connector to the positive (+) terminal of the HART Transmitter. Connect the Black connector to the negative (-) terminal of the HART transmitter. The HART transmitter is now powered. The HART Loop resistor is built-in to the modem so an external resistor is not required for this mode when using an external HART modem.

Current Measurement

You can measure the loop current without breaking the loop. Simply connect your current meter to the “Current” test points on the HM-USB-PWR.

External HART Modem Option

With the HM-USB-PWR operating in the Power Only mode, an external HART modem or HART Communicator can be connected to the “HART” test points. The loop resistor is built-in so no external loop resistor is necessary.

HART and Power Connections

Simply connect the modem to the HART transmitter observing power polarity. See Figure 1.

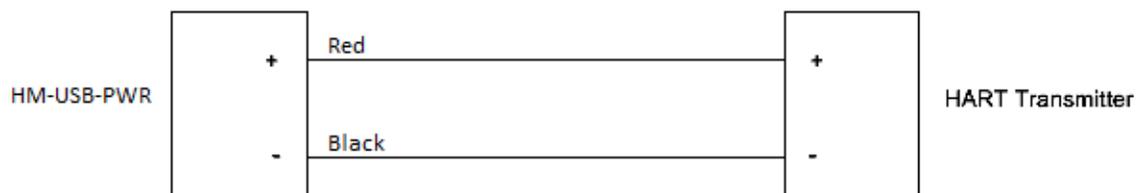


Figure 1. HART and Power Connections

USB Connection

Connect the integral USB-A connector to any available USB port on your PC.

LEDs

Two LEDs provide operating status information – 24Vdc and USB Power.

USB Power

This should illuminate when the USB connector is connected to your PC.

24Vdc

This should illuminate when the HART cable is connected to the “Modem + Power” connector. This means 24Vdc power is present on the cable ends.

PC Power

No external power sources are required for the HM-USB-PWR. Power is derived from the USB connection to the PC.

AC Power

If a PC is not available, the HM-USB-PWR comes with an AC Adapter. Simply plug the AC Adapter into a power outlet and then plug the USB cable of the HM-USB-PWR into the AC Adapter.

The USB Power LED will illuminate.

Test Software

Program “HM Test” is included on the installation CD to test the operation of the HM-USB-PWR. Launch the program from the CD or from the installed icon. Enter the com port 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-PWR in your system. Consult the “Troubleshooting” section of this manual if test failure.

Troubleshooting

Verify the following:

1. Com port number in application is the HM-USB-PWR com port number.
2. HART Transmitter has power.
3. If multi drop configuration, all HART transmitters in the loop have unique addresses.
4. HM-USB-PWR USB connector seated firmly in PC USB connector.
5. HM-USB-PWR HART connector seated firmly on the device.

Warranty

The HM-USB-PWR is warranted for 1 year for materials and workmanship. Contact Support at ProComSol, Ltd if having trouble. An RMA (Return Material Authorization) number obtained from ProComSol, Ltd is required on all returned items.

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