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MiCROLiNK 101-0027 HART Protocol Modem Instruction Manual

Contents

MiCROLiNK

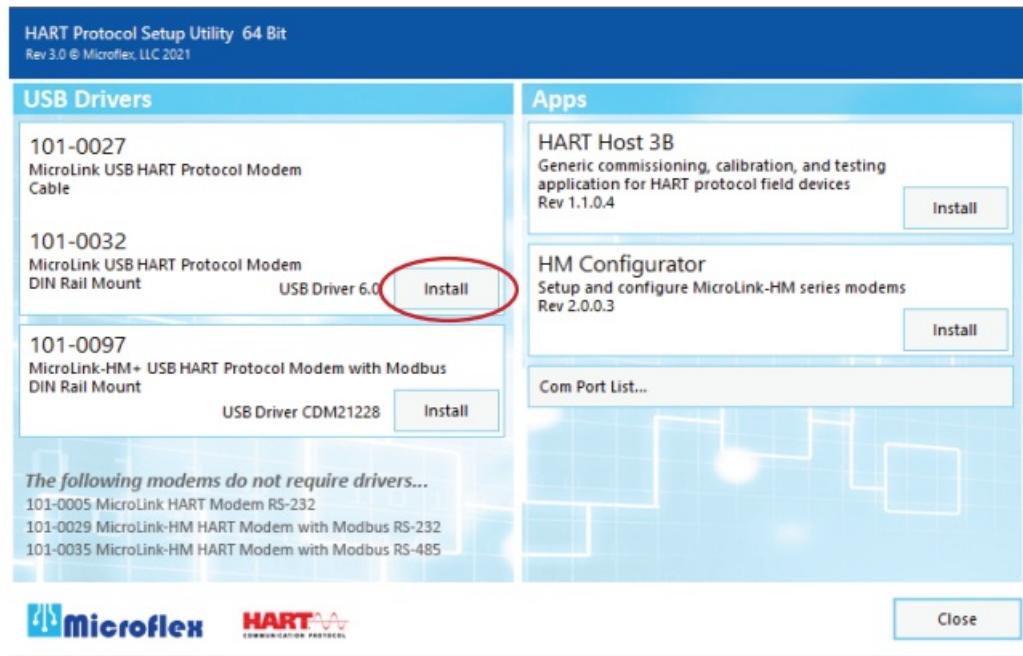**MiCROLiNK 101-0027 HART Protocol Modem**

General Description

The MicroLink 101-0027 is a USB HART® protocol modem. It provides the hardware interface between Highway Addressable Remote Transducer devices (HART) and a Windows® PC with a USB interface. MicroLink is used for commissioning, diagnostics, monitoring, and testing HART field devices. Virtual serial port drivers allow the USB MicroLink to appear as an RS-232 com port to Windows and your HART software. A rugged design makes MicroLink an ideal choice for field engineers and technicians who service HART devices in an industrial environment.MicroLink is compatible with all registered HART devices and all leading HART configuration and monitoring software.

Driver Pre-Installation

The USB drivers should be installed before the MicroLink HART modem is connected to the PC's USB port. AŌer the drivers are installed, Windows will automatically detect the modem when it is connected to the USB port and complete the setup.

Important!

Install the USB driver before connecting to the USB port. To pre-install the drivers, run Msetup.exe from the included CD. The CD will auto-run this fi le if the Windows autorun feature is enabled for your CD drive.

Msetup.exe HART Protocol Setup Utility

Click the Install button in the 101-0027 window to pre-install the USB drivers. The driver installer will guide you through the setup process. Installers can also be run manually from the CD, without running Meetup, by running \x86\dpinst.exe fi le for 32-bit operating systems or x\64\dpinst.exe for 64-bit operating systems.

Don't have a CD drive?
Download the HART Protocol CD image from **www.microflx.com/pages/support** Running the file will self-extract the compressed files and start the Msetup.exe HART Protocol Setup Utility.

Driver inf file – Manually Installed
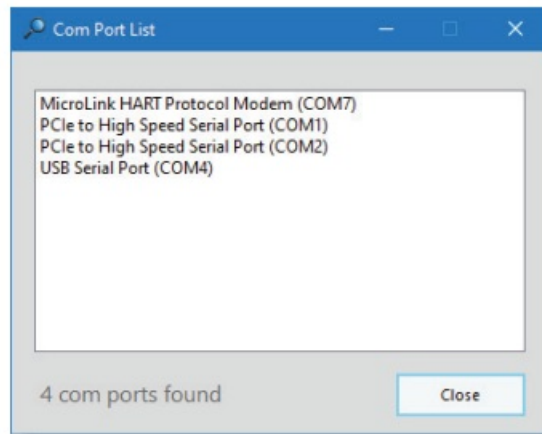
To manually install the driver inf file…

1. Connect the Converter to the USB port.
2. Open the Windows Device Manager.
3. The New Device Wizard will have added the converter under Ports (COM & LPT) and will appear as MicroLink HART Protocol Modem (COMx). Right-click the device and select Update Driver Software…
4. Choose to Browse for the driver's software and browse to the CD or the location of the MxHART.inf fi le.
5. Follow the wizard prompts to complete the driver setup.

Uninstalling the USB Drivers
If needed, use Windows Device Manager to uninstall the driver from your system. With the modem connected to the USB port, locate the MicroLink modem in the Device Manager hardware tree under Ports (COM & LPT). Right-click on MicroLink HART Protocol Modem and select Uninstall from the pop-up menu. When the process has finished, unplug the modem from the USB port.

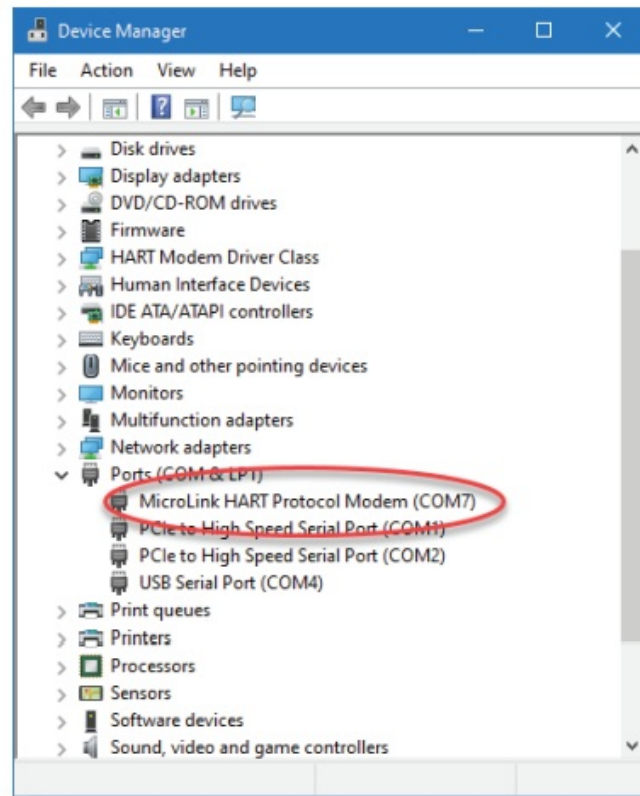**Finding the Assigned COM Port Number**

When Windows installed the serial port driver the next available COM port number was assigned to the converter. The software you use with the converter must be set to use the same COM port number. To find the number assigned to your converter run Msetup.exe from the CD and click the Com Port List… button to show a list of found devices and assigned COM port numbers.

To use the list…

Unplug the modem from the USB port and it will be removed from the Com Port List. Plug the modem into the USB port and it will be added to the Com Port List. Set your HART soŌware to use the same COM number assigned to your modem.

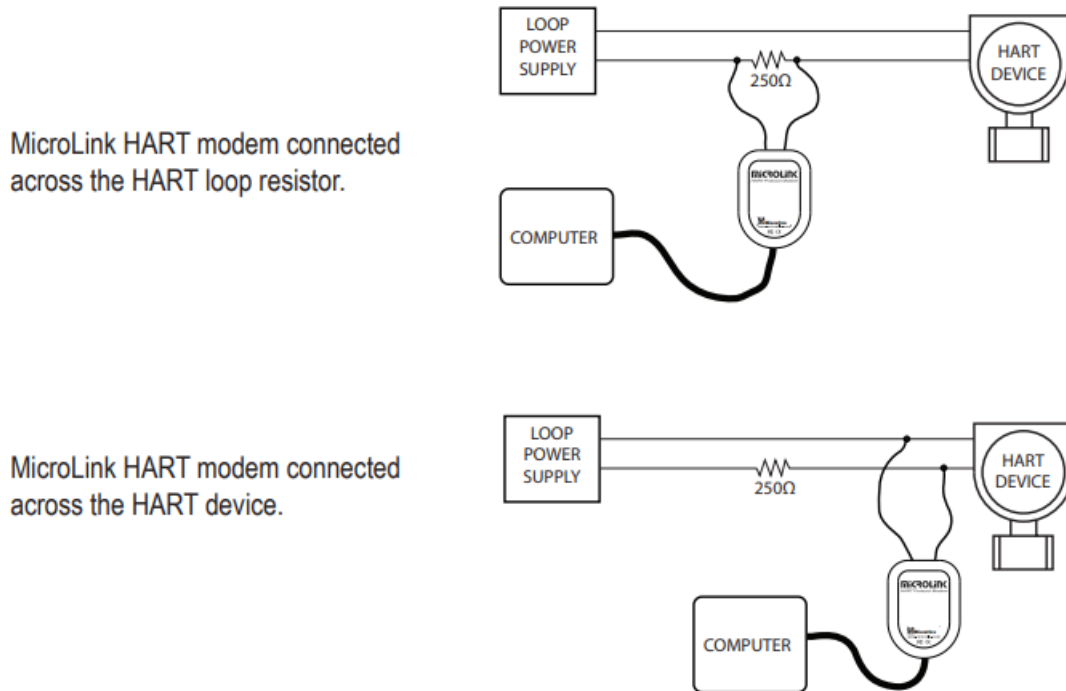## Using Windows Device Manager

Windows Device Manager

The assigned COM port number can be found using Windows Device Manager. Open Device Manager and select View > Devices by Type. You may need to expand the Device Manager tree under Ports (COM and LPT) to see the converter. In the example shown below, the modem is assigned to COM 7. The assigned serial COM port number can be changed to any available COM port using Windows Device Manager. Expand Ports (COM & LPT) in the list to see which port the converter is assigned to. Right-click MicroLink HART Protocol Modem and select Properties from the pop-up menu. On the Port Settings tab, click Advanced. Drop down the COM Port Number list and select the desired port number. Click OK to use the new port number and close the window. Unplug the MicroLink modem from the USB port and then re-connect it to allow Windows® to update the USB device parameters. Click OK again to close the Properties window.

Software Setup

Make sure your HART software is set to use the same serial COM port number that the MicroLink modem is assigned to. There are no hardware setțNGS required by the MicroLink modem and modem power is provided by the USB port. All other setțNGS, such as BAUD rate and parity, are taken care of by your HART software.

Connecting to the HART Device

Connect the two mini-clips to the HART device or HART loop. MicroLink provides electrical isolation between the HART loop and the PC. It is safe to ignore grounding and polarity issues when making the HART connections. The HART protocol requires a loop resistance of 230 to 600 ohms, typically 250 ohms. Refer to your equipment installation instructions for details on connecting a HART protocol modem or configuration of the device to the loop.

MicroLink HART modem connected across the HART loop resistor.

MicroLink HART modem connected across the HART device.

Two common methods for connecting the HART modem to a loop-powered device.

Safety Considerations

- Conformity in accordance with Part 2, and Part 15, Subparts A and B of the Federal Communications Rules and Regulations, and ICES-003 of theIndustry Canada standards.
- This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by Microflex could void the user's authority to operate this equipment.
- Emissions EN55022: 1998
- Electrostatic Discharge EN61000-4-2: 1995, A1: 1998, A2: 2001
  - Radiated Immunity EN 61000-4-3: 2002
  - Safety Compliance EN 60950-1: 2002
- This device does not have protection from over-voltages which may exist on USB ports of computers and relies on the protection existing in a host computer.
- This device is not intended for connection to the phone line through the appropriate converters and shall not be

- connected to telecommunication lines because it has no protection against over-voltages that may exist in these lines.
- The user shall ensure the protection of the operator from access to areas with hazardous voltages or hazardous energy in their equipment.
- The user shall ensure that the connection port of the field device and the modem is separated at least by basic insulation from any primary circuit existing in the field device.

MicroLink Specifications

Enclosure
Molded Buna-N 90 Durometer Rubber with
Stainless Steel Cover

- Weight ……………………………………………………………………… 5 ounces
- Modem Dimensions ………………………………….. 1.75" x 2.375" x 0.625"

USB

- Connector …………………………………………………………………… USB-A
- Cable Length …………………………………………………………………… 6 feet
- Compatibility …………………………………………… USB 1.1, USB 2, USB 3
- Active Current …………………………………………………………. 30mA Max
- Suspend Current ………………………………………… Less than 200μA Typical

HART

- Termination …………………………………………. Pamona Electronics Mini-Clips
- Leads ……………………………………… 1 Foot High Flexibility Test Lead Wire
- Connection Method ……………..Transformer Isolated, Capacitor Coupled
- DC Loop Voltage ……………………………………………………….50Vdc Max
- Demodulation Jitter ………………………………………… 12% of 1 bit Typical
- Carrier Detect Threshold ……………………………………………… 100mV Typical
- Leakage to Process Loop ………………………………………….. ±10μA Max

Environmental

- Operating Temperature …………………………-20ºC to 50ºC (-4ºF to 122ºF)
- Storage Temperature …………………………..-40ºC to 85ºC (-40ºF to 185ºF)
- Humidity ………………………………………….. 0 to 99% (non-condensing)

Limited Warranty

Microsoft ex, LLC warrants this unit against defects in materials and workmanship for a period of one year from the date of shipment. Microsoft ex, LLC will, at its option, repair or replace equipment that proves to be defective during the warranty period. This warranty includes parts and labor. A Return Materials Authorization (RMA) number must be obtained from the factory and clearly marked on the outside of the package before the equipment

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The HART protocol is supported by the FieldComm Group in Austin Texas, **www.fieldcommgroup.org**. HART is a registered trademark of the FieldComm Group.

Documents / Resources

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