

**MicroLink**  
HART Protocol Modem  
USB Interface  
DIN Rail Mount

**101-0032**

**Installation  
Operation  
& Specifications  
Manual**



**General Description**

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The MicroLink 101-0032 is a USB to HART® protocol modem for 35 mm DIN rail mounting. It provides the hardware interface between Highway Addressable Remote Transducer devices (HART) and a computer with a USB interface. Universal Serial Bus (USB) drivers make MicroLink compatible with most software developed for RS-232 serial port interfaces because MicroLink appears as an RS-232 port to your HART software. Communications direction control is handled internally so there is no need to handle tricky request-to-send (RTS) handshake timing, greatly simplifying software development.

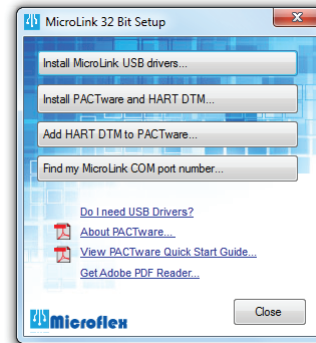
The DIN rail mounting clip is compatible with widely used 35 mm EN 50022 rails. It can be snap mounted and removed from the mounting rail without tools for quick installation and servicing. A status LED provides confirmation of the transmitted and received HART packets to help you quickly troubleshoot your system and verify operation. Power is provided by the USB port so no external power supply is required.



## ***Driver Pre-Installation - 8, 7, Vista, XP, and 2000***

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

To pre-install the drivers, run **Msetup.exe** from the included CD and follow the on-screen prompts. The CD will auto-run this file if the Windows autorun feature is enabled for your CD drive. The **Msetup.exe** is a utility that will determine your operating system and run the correct installer. Click the **Install MicroLink USB drivers...** button to pre-install the drivers. The driver installer will guide you through the setup process.



MicroLink HART modem setup utility.

***Important!***  
***Run the setup utility before connecting to the USB port.***



To run the driver package installer utility directly from the CD use **\x86\dpinst.exe** for 32 bit operating systems or **\x64\dpinst.exe** for 64 bit operating systems.

## ***Driver - Manually Installed***

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To manually install the driver...

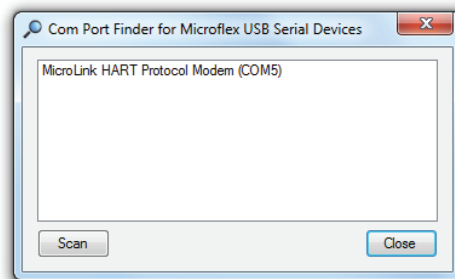
1. With the MicroLink converter connected to the USB port...
2. Open the Windows Device Manager.
3. The new device wizard will have added the converter under **Ports (COM & LPT)** and will appear as **MicroLink HART Protocol Modem (COMx)**. Right click the device and select **Update Driver Software...**
4. Choose to Browse for the driver software and browse to the CD or the location of the **MxHART.inf** file.
5. Follow the wizard prompts to complete the driver setup.

## ***Finding the Assigned COM Port Number***

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When Windows installed the serial port emulator 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 the setup utility from the CD and click **Find my Converter's COM port number...**

The assigned COM port number can also be found using the Windows Device Manager. You may need to expand the Device Manager tree under **Ports (COM and LPT)** to see the converter.



COM Port Number Finder - modem is assigned to COM 5.

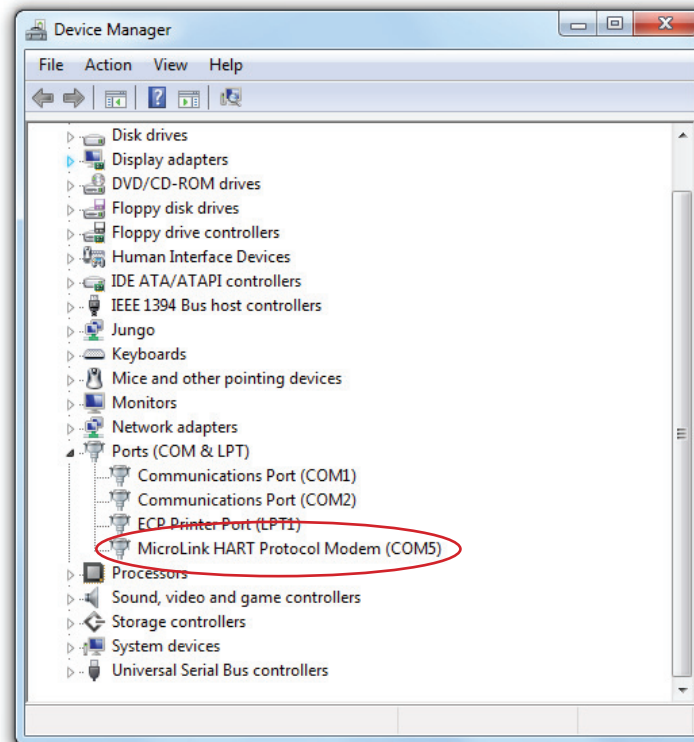
## ***Uninstalling the USB Drivers***

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For Windows 8, 7, Vista, XP, and 2000 - use the Device Manager to uninstall the driver from your system. With the MicroLink modem connected to your USB port, locate the modem in the hardware tree under **Ports(Com & LPT)**. For details on how to do this refer to the section on *Changing the COM Port Number* in this manual and Windows® help. 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.

## ***Changing the COM Port Number***

The assigned serial COM port number can be changed to any available COM port by using the Device Manager. Open the Device Manager and select **View > Devices by Type**. Expand **Ports (COM & LPT)** in the list to see which port the converter is assigned to. In the example shown below, the modem is assigned to COM5.



Windows Device Manager.

Right click on **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 the USB port. This will allow Windows® to update the USB device parameters.

Click **OK** again to close the Properties window.

## Software Setup

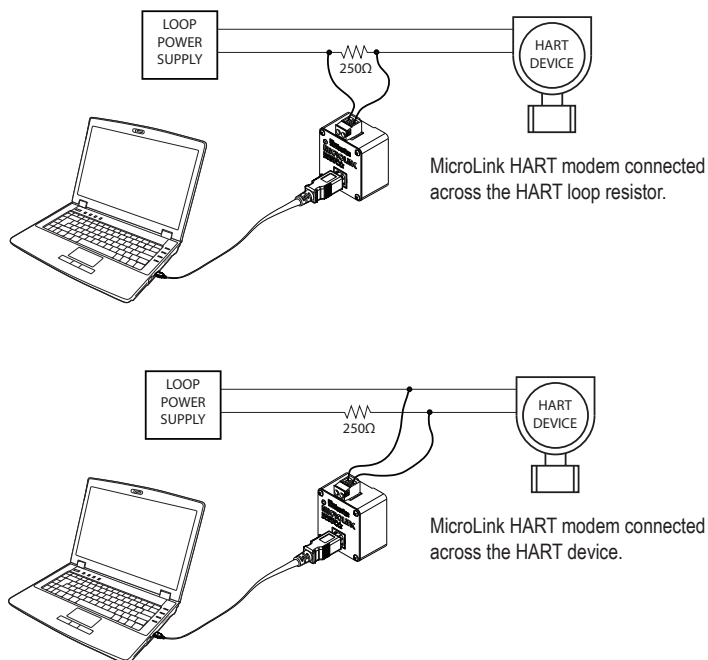
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Make sure your HART software is set to use the same serial COM port number that the Microlink modem is connected to. There are no hardware settings required by the Microlink modem and modem power is provided by the USB port. All other settings, such as BAUD rate, are taken care of by your HART software. If you are using PACTware, refer to the “PACTware Quick Start Guide” and the PACTware manual for installation and setup details.

## Connecting to the HART Device

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Connect the two screw terminals 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 master or configuration device to the loop.



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

## Status LED Operation


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When the modem is connected to the USB port with drivers installed, the status LED will be green indicating that the modem is ready. The LED will be red while transmitting or sending a packet to your HART protocol device. The LED will be orange while receiving the HART reply.


## ***Safety Considerations***


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**FC** Conformity in accordance with Part 2, and Part 15, Subparts A and B of the Federal Communications Rules and Regulations, and ICES-003 of the Industry 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.

**CE** 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

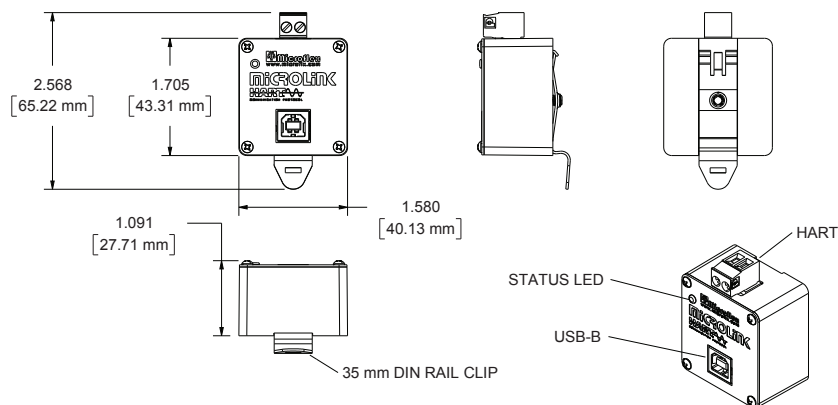
 This device does not have protection from over-voltages which may exist on USB ports of computers and relies on the protection existing in a host computer.

 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 which 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.

## Specifications



### Enclosure

Polycarbonate plastic with Stainless Steel Cover  
 Weight.....5 ounces

### USB

Connector ..... USB-B  
 Compatibility ..... USB 1.1, USB 2.0, and USB 3  
 Active Current ..... 30mA Max  
 Suspend Current..... Less than 600µA Typical

### HART

Termination ..... Plugable Screw Terminals, 26-12 AWG  
 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

### Status LED

Green ..... Ready & Healthy  
 Red ..... Transmitting HART packet  
 Orange ..... Receiving HART packet

### Environmental

Operating Temperature ..... -30°C to 60°C (-22°F to 140°F)  
 Storage Temperature ..... -40°C to 85°C (-40°F to 185°F)  
 Humidity ..... 0 to 95% (non-condensing)

## ***Limited Warranty***

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Microflex, LLC warrants this unit against defects in materials and workmanship for a period of one year from the date of shipment. Microflex, 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 equipment will be accepted for warranty work.

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