



***Installation
Operation &
Specifications
Manual***



General Description

The MicroLink 101-0007 is a USB to HART® device Interface. It provides the hardware interface between Highway Addressable Remote Transducer devices (HART) and a computer with a USB interface, such as a Windows® PC. 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 – taking care of timing and handshake issues unique to the HART protocol.

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 that use an RS-232 serial port for their interface. For a HART modem with an RS-232 interface, Microflex offers the 101-0005.

Driver Installation - 2000, XP, and Vista

If you are using Windows 2000, XP, or Vista, the USB drivers can be installed before the MicroLink 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 MicroLink.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. MicroLink.exe will determine your operating system and run the correct installer. Installers can be manually run using DPIInstx86.exe for 32 bit operating systems or DPIInstx64 for 64 bit operating systems.

MicroLink USB drivers are Microsoft certified and are available on the Microsoft Driver Distribution Center web site. The files can be automatically installed without the CD if your computer is connected to the internet and you select to search the web for the latest driver version.

Driver Installation - Windows 98 and ME

Windows 98 and ME USB drivers must be installed after the MicroLink modem is connected to the USB port.

CONNECT THE MODEM TO THE USB PORT BEFORE INSTALLING DRIVERS

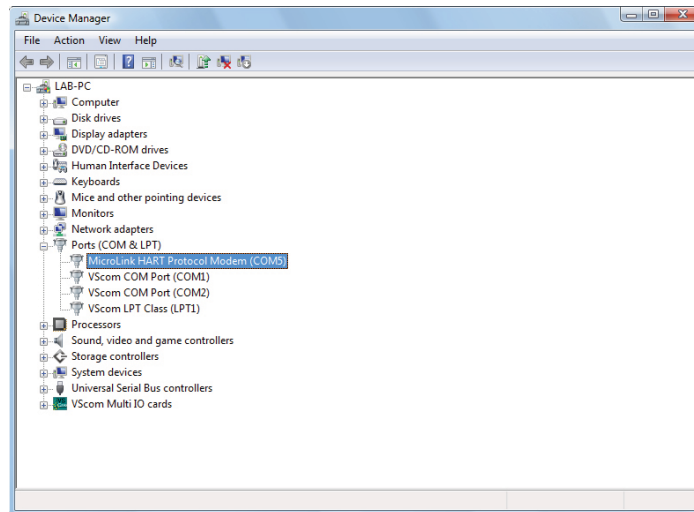
Windows will automatically detect the modem when it is connected and prompt you for the correct drivers to be installed. In Windows 98 and ME, the Found New Hardware Wizard should be used to install the drivers when the modem is connected to the USB port for the first time.

When prompted, the drivers are located in the *Windows98* folder on the CD.

If a device of the same type has been previously installed on your machine, and the drivers that are about to be installed are different from those installed already, the previous drivers need to be uninstalled. Refer to the "Uninstalling MicroLink Drivers" section of this manual for details of this procedure.

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. Select “View > Devices by Type”. Expand “Ports (COM & LPT)” in the list to see which port the Microlink modem is assigned to. In the example shown below, the Microlink modem is assigned to COM5.



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.

Click “OK” again to close the MicroLink HART Modem Properties window.

Uninstalling MicroLink USB Drivers

For Windows 2000, XP, and Vista - use the Device Manager to uninstall the driver from your system. With the modem connected to your USB port, locate the MicroLink modem in the hardware tree. For details on how to do this refer to the section on “Changing the COM Port Number” in this manual. 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.

For Windows 98 and ME, always use the Add/Remove Programs utility to remove the MicroLink drivers as this uses the uninstaller program to remove the files and registry entries to leave a clean system. Other methods may leave fragments of the driver that may interfere with future installations.

- Step 1: Disconnect any MicroLink modems that are attached to the PC.
- Step 2: Open the Add/Remove Programs utility located in “Control Panel\Add/Remove Programs”.
- Step 3: Select “MicroLink HART Modem Drivers” from the list of installed programs.
- Step 4: Click “Change/Remove” button. This will run the uninstaller program. Click “Continue” to run the uninstaller or “Cancel” to exit.
- Step 5: When the uninstaller has finished removing the device from the system, the caption on the “Cancel” button will change to “Finish”. Click “Finish” to complete the process.

Software Setup


Make sure your HART software is set to use the same serial COM port 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 details.

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 between 230 and 600 ohms, typically 250 ohms. Refer to your equipment installation instructions for details on connecting a HART master or configuration device to the loop.


Safety Considerations


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 RS-232 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.

MicroLink Specifications

Enclosure

Molded Buna-N 90 Durometer Rubber with
Stainless Steel Cover
Weight5 ounces
Modem Dimensions 1.75" x 2.375" x 0.5"

USB

Connector USB-A
Cable Length 6 feet
Compatibility USB 1.1 and USB 2.0
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 -20°C to 50°C (-4°F to 122°F)
Storage Temperature -40°C to 85°C (-40°F to 185°F)
Humidity 0 to 99% (non-condensing)

Limited Warranty

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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*Microflex, LLC
2202 Red Bird Lane
Brookshire, Texas 77423
USA*

*Phone 281-855-9639
Fax 832-422-4391
www.microflx.com*