

**MicroLink™**  
HART Protocol Modem - RS-232 Interface

**101-0005**

**HART**  
COMMUNICATION PROTOCOL

***Installation  
Operation &  
Specifications  
Manual***



CE FC

**General Description**

The MicroLink 101-0005 is an RS-232 serial port to HART® device interface. It provides the hardware interface between Highway Addressable Remote Transducer devices (HART) and a computer with an RS-232 serial port, such as a Windows® PC. The 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 the interface. For a HART modem with a USB interface, Microflex offers the 101-0007.

## ***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.

## ***Software Setup***

---

Make sure your HART software is set to use the same 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 RS-232 port handshake lines. All other settings, such as BAUD rate, are taken care of by your HART software.

## ***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  
Weight .....5 ounces  
Modem Dimensions ..... 1.75" x 2.375" x 0.625"

### **RS-232 Serial Port**

Connector ..... 9-Pin Female D-Shell  
Cable Length ..... 6 feet (3 Meters)  
*(Can be extended up to 25 feet)*  
Receive Data ..... Pin 2  
Transmit Data ..... Pin 3  
Data Terminal Ready (DTR) ..... Pin 4  
Ground ..... Pin 5  
Request To Send (RTS), Selects Transmit/Receive ..... Pin 7  
Clear To Send (CTS), Internally shorted to Pin 7 ..... Pin 8

### **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 Authorization (RA) number must be obtained from the factory and clearly marked on the outside of the package before equipment will be accepted for warranty work.

Microflex, LLC believes that the information in this manual is accurate. In the event that a typographical or technical error exist, Microflex, LLC reserves the right to make changes without prior notice to holders of this edition. The reader should consult Microflex, LLC if any errors are suspected. In no event should Microflex, LLC be liable for any damages arising out of or related to this document or the information contained in it.

EXCEPT AS SPECIFIED HEREIN, MICROFLEX, LLC MAKES NO WARRANTIES OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. CUSTOMER'S RIGHT TO RECOVER DAMAGES CAUSED BY FAULT OR NEGLIGENCE ON THE PART OF MICROFLEX SHALL BE LIMITED TO THE AMOUNT THERETOFORE PAID BY THE CUSTOMER. MICROFLEX, LLC WILL NOT BE LIABLE FOR DAMAGES RESULTING FROM LOSS OF DATA, PROFITS, USE OF PRODUCTS, OR INCIDENTAL OR CONSEQUENTIAL DAMAGES, EVEN IF ADVISED OF THE POSSIBILITIES THEREOF. This limitation of the liability of Microflex, LLC will apply regardless of the form of action, whether in contract or tort, including negligence. Any action against Microflex, LLC must be brought within one year after the cause of action accrues. The warranty provided herein does not cover damages, defects, malfunctions, or service failures caused by owners failure to follow Microflex, LLC's installation, operation, or maintenance instructions; owners modification of the product; owner's abuse, misuse, or negligent acts; and power failure or surges, fire, flood, accident, actions of third parties, or other events outside reasonable control.

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

*Phone 281-855-9639  
Fax 832-422-4391  
[www.microflx.com](http://www.microflx.com)*