

RS-485 CONVERTER

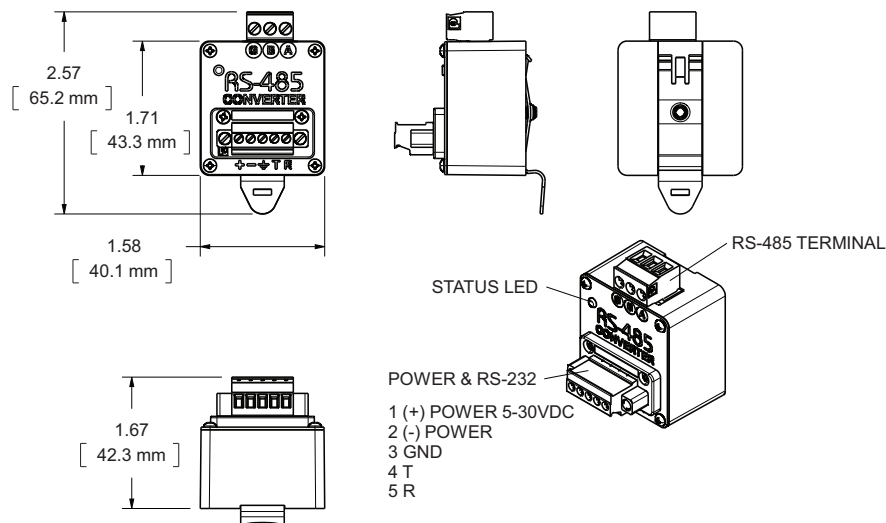
101-0090

**RS-232 to 2-Wire RS-485 Converter
Galvanically Isolated,
DIN Rail Mounted**

Installation Operation & Specifications Manual



The 101-0090 RS-232 to RS-485 converter provides a simple, galvanically isolated interface between an RS-232 serial port, and 2-wire RS-485 devices. It features automatic direction control to switch between receive and transmit so RTS (Request To Send) is not needed. DIN rail mounting allows the converter to be quickly installed in your equipment rack, along with other DIN mounted equipment.



Power Supply

The RS-232 to RS-485 Converter is powered through an external 5 to 30Vdc power supply. Connect the positive side to **+**, and the negative side to **-**.

RS-232 Terminal Block

For RS-232 communications only Transmit, Receive, and Ground are required. Connect an RS-232 Ground to Pin 3 (-) which is internally connected to power ground **-**, Transmit to **T**, and Receive to **R**.

Microflex offers an RS-232 female D-sub connector to 3 conductor cable, P/N 101-0088, to simplify connections to a serial port.

For a USB to 2-Wire RS-485, DIN rail mount, galvanically isolated converter Microflex offers the 101-0019

Connecting to the RS-485 Bus

Connect the converter to the RS-485 bus using the **A**, **B**, and **G** screw terminals. Connect the **G** terminal to the RS-485 bus ground or shield. The **G** ground is galvanically isolated from the converters power and RS-232 ground. **A** and **B** are the non-inverting and inverting RS-485 transceivers.

The converter does not include an internal bus terminating resistor. RS-485 busses typically require a terminating resistor at each end of the bus. Connecting directly to a device, to perform a configuration for example, may be done without a terminating resistor.

Specifications

Enclosure

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

Terminal Block

Connector 5-Pin 3.81 mm Plugable Terminal Block
+ Power Supply (+) 5V to 30Vdc, 0.24W typ, 0.42W maxPin 1
- Power Supply (-)Pin 2
Ground RS-232 Ground Internally connected to Supply (-)Pin 3
T RS-232 Transmit.....Pin 4
R RS-232 ReceivePin 5

RS-485

Termination	Plugable Screw Terminals, 26-12 AWG G = Isolated ground, A = Non-inverting, B = Inverting
BUAD Rates	300, 600, 1200, 2400, 4800, 9600, 14400, 19200, 38400 19200, 38400, 57600, 115200
Parity	None, Odd, Even, Space, Mark
Driver Output Voltage	Unloaded 5V @ 27Ω Load 1.5V Min
Δ Input Threshold Receive Voltage	+/- 0.2V
Receiver Input Hysteresis	25 mV Typ.
Receiver Input Resistance	> 96KΩ, 125KΩ Typ.
Galvanic Isolation	1000VRMS
Surge Protection	600W Silicone Avalanche Diodes

- Does not include RS-485 termination resistor
- Auto transmit control - RTS is not needed
- Power Up/Down glitch-free permits live insertion or removal
- High common mode transient immunity: 30kv/us
- 1000VRMS Galvanic isolation
- 7-bit no parity mode requires 2 stop bits

Status LED

Green	Transmitting RS-485
Red	Receiving RS-485

Mounting

Snaps on and off standard 35mm DIN rail, no tools needed

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)

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, LLC 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 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 converter is separated at least by basic insulation from any primary circuit existing in the field device.

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.

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 THEREFORE 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.

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

*Microflex, LLC
35900 Royal Road
Pattison, Texas 77423
USA*

The HART protocol is supported by the HART Communications Foundation in Austin Texas, www.hartcomm.org. HART is a registered trademark of the HART Communications Foundation.

