

# RS-485 CONVERTER

## Installation Operation & Specifications Manual

**101-0090**

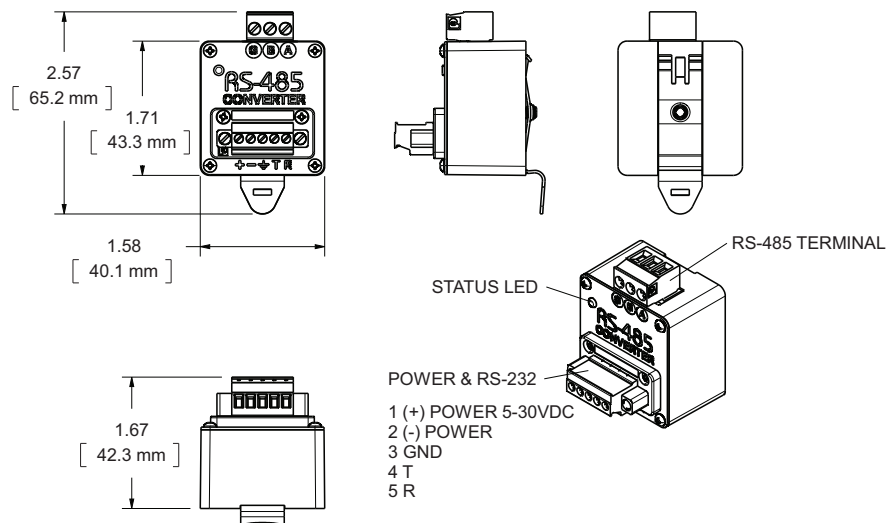
**RS-232 to 2-Wire RS-485 Converter  
Galvanically Isolated,  
DIN Rail Mounted**



### General Description

The 101-0090 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***

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The 101-0090 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***

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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 9-pin 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***

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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***

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### ***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 max .....Pin 1  
- Power Supply (-) .....Pin 2  
Ground RS-232 Ground Internally connected to Supply (-) .....Pin 3  
T RS-232 Transmit.....Pin 4  
R RS-232 Receive .....Pin 5

## RS-485

Termination .....	Plugable Screw Terminals, 26-12 AWG G = Isolated ground, A = Non-inverting, B = Inverting
BAUD Rates	300, 600, 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 115200
Parity .....	None, Odd, Even, Space, Mark
Driver Output Voltage .....	Unloaded 5V @ 27 $\Omega$ Load 1.5V Min
$\Delta$ Input Threshold Receive Voltage .....	+/- 0.2V
Receiver Input Hysteresis .....	25 mV Typ.
Receiver Input Resistance .....	> 96K $\Omega$ , 125K $\Omega$ 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

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

### ***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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