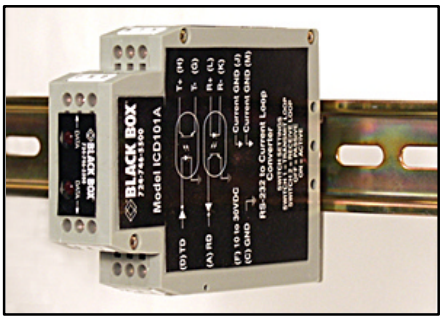


Model ICD101A

DIN Rail Mount RS-232 to Current Loop Converter

with Terminal Blocks **CE**

Introduction

The ICD101A is a DIN rail mountable RS-232 to current loop converter. This unit has one optically isolated 20mA transmit loop and one optically isolated 20mA receive loop. Each loop can be set to either “Active” or “Passive”. When set to “Active” an isolated 20mA current is supplied for each loop (transmit and receive). Only a single power supply between 10VDC and 30VDC is required to power the converter and both current loops. Terminal block (A) is RS-232 OUT (from the ICD101A) and terminal block (D) is RS-232 IN (to the ICD101A). The ICD101A can communicate at a maximum baud rate of 19.2K baud. 20mA current loop is suitable for distances to 2000 ft. (600 meters) at data rates up to 19.2K baud with careful attention to interface design. Below are several figures showing different ways to test and configure the ICD101A.

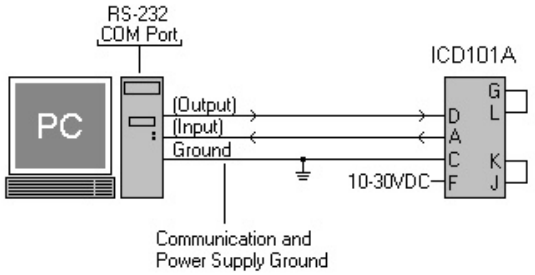
PC Serial Port (DTE) Connections

DB9 Male Type Serial Connector

Pin 2 - Receive (Input)
Pin 3 - Transmit (Output)
Pin 5 - GND (Ground)

DB25 Male Type Serial Connector

Pin 2 - Transmit (Output)
Pin 3 - Receive (Input)
Pin 5 - GND (Ground)



Switch Settings = Switch 1 ON & Switch 2 OFF

Figure 1

Figure 1 is a loopback test for the Model ICD101A. This will verify the Model ICD101A is operating properly. Characters will be sent from the RS-232 Port of the PC and received back into the PC RS-232 Port through the ICD101A.

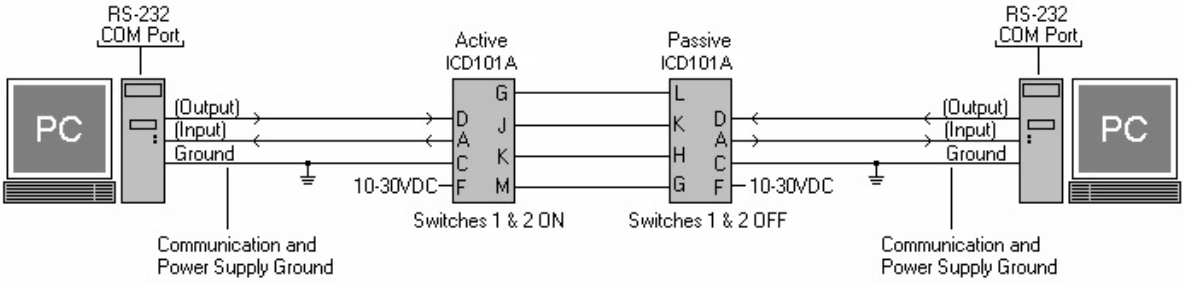


Figure 2

Figure 2 is an example of interfacing two Model ICD101A converters. The ICD101A on the left is configured as "active" and the ICD101A on the right is configured as "passive".

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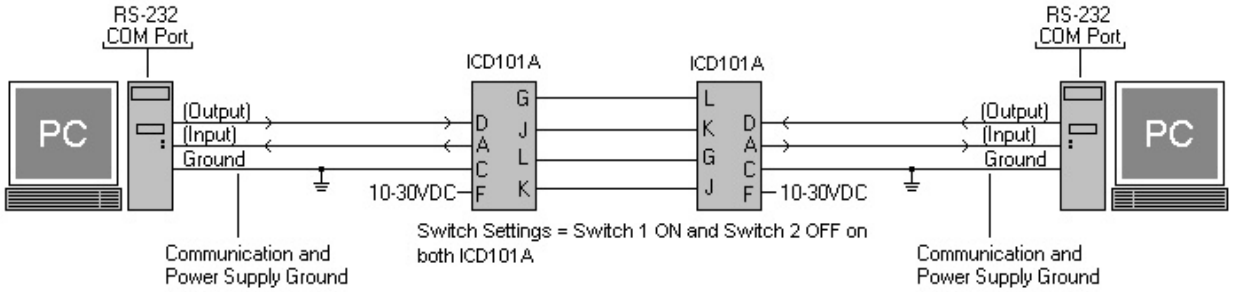


Figure 3

Figure 3 is a connection diagram that shows "active" transmit and "passive" receive on both ICD101A's.

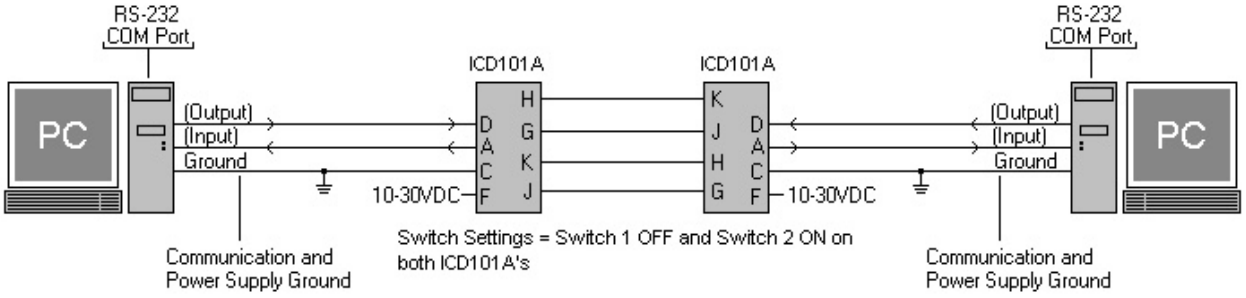


Figure 4

Figure 4 is a connection diagram that shows "active" receive and "passive" transmit on both ICD101A's.

Active or Passive

The ICD101A can be set to active or passive by the flip of a switch. Figures 1-4 show four different ways to configure the ICD101A using two PC's. To set SW1 and SW2 you will need to open the hood on the ICD101A. To open the ICD101A remove the side panel by using a flat blade screwdriver. Push the flat blade screwdriver under the panel that has the "Model ICD101A" label on it and pry the panel off. This panel will simply snap off (and on). The two-position dipswitch is located on the printed circuit board. Tables 1 and 2 below (Transmit and Receive respectively) show connection configurations for active and passive modes.

If you have a separate current loop device (printer, scale, CNC, etc.) you may have to check your device documentation to see if it is configured as active or passive. If you do not know if your device is active or passive you can simply check it with a voltmeter. To do this set the voltmeter to DC Volts and put the positive (red) lead on the T+ and the black (negative) lead on the T- of the current loop device. If you see a voltage displayed on the voltmeter your device is active. If no voltage appears your device is passive.

Table 1: Transmit

	SW1	H	G	J
Active	On	NC	Connect to R+	Connect to R-
Passive	Off	Connect to R+	Connect to R-	NC

Table 2: Receive

	SW2	L	K	M
Active	On	NC	Connect to T+	Connect to T-
Passive	Off	Connect to T+	Connect to T-	NC

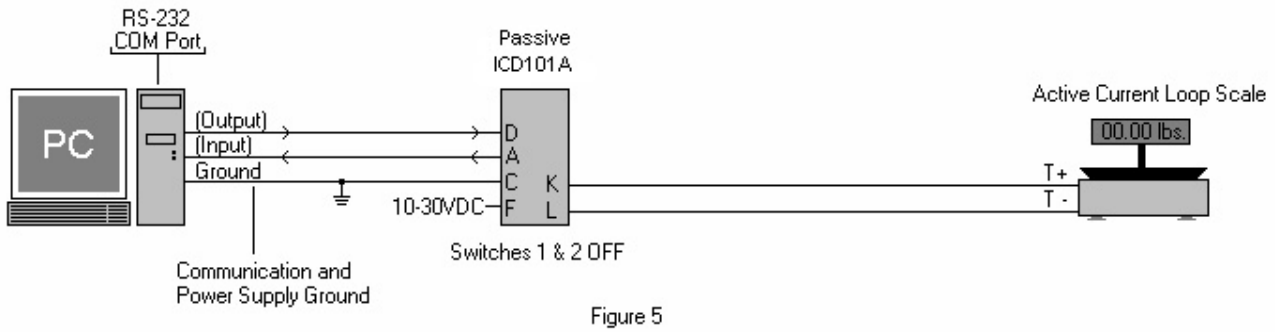
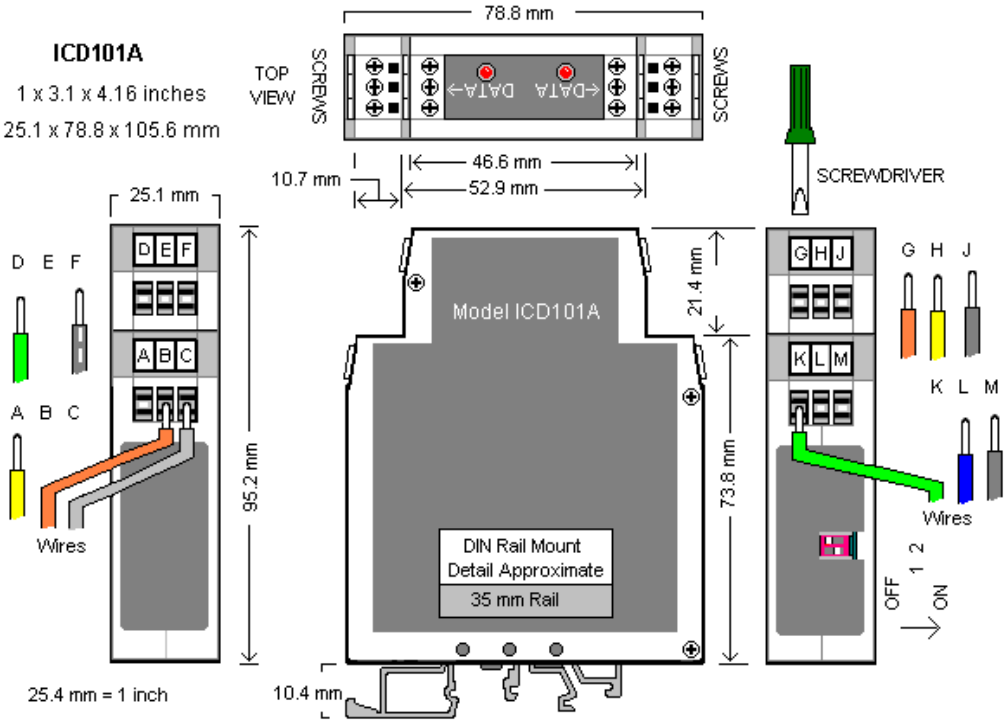


Figure 5

Typical Current Loop Scale Application

Typical Applications

Figure 5 is a typical application of an “active” current loop scale and the ICD101A configured in “passive” mode. Some scale manufacturers sell weight scales that have a current loop interface. A different “active” current loop device of your choice could easily replace the scale. This figure simply portrays the basic idea of connecting an “active” (Transmit only) current loop device to the ICD101A (configured as “passive”).



Specifications

Dimensions:	1 x .31 x 4.16 in (25.1 x 78.8 x 105.6 mm)
Temperature Range:	0 to 80°C (32 to 176°F)
Humidity Range:	0 to 95% non-condensing
Supply Voltage:	+10 to 30VDC @ 100mA
Data Rates:	Up to 19.2kbs
Connectors:	Screw down terminal blocks for RS-232 and current loop sides
LEDs:	Two RED data LED’s show direction of data flow
Isolation:	1000 VDC isolation for 1 second

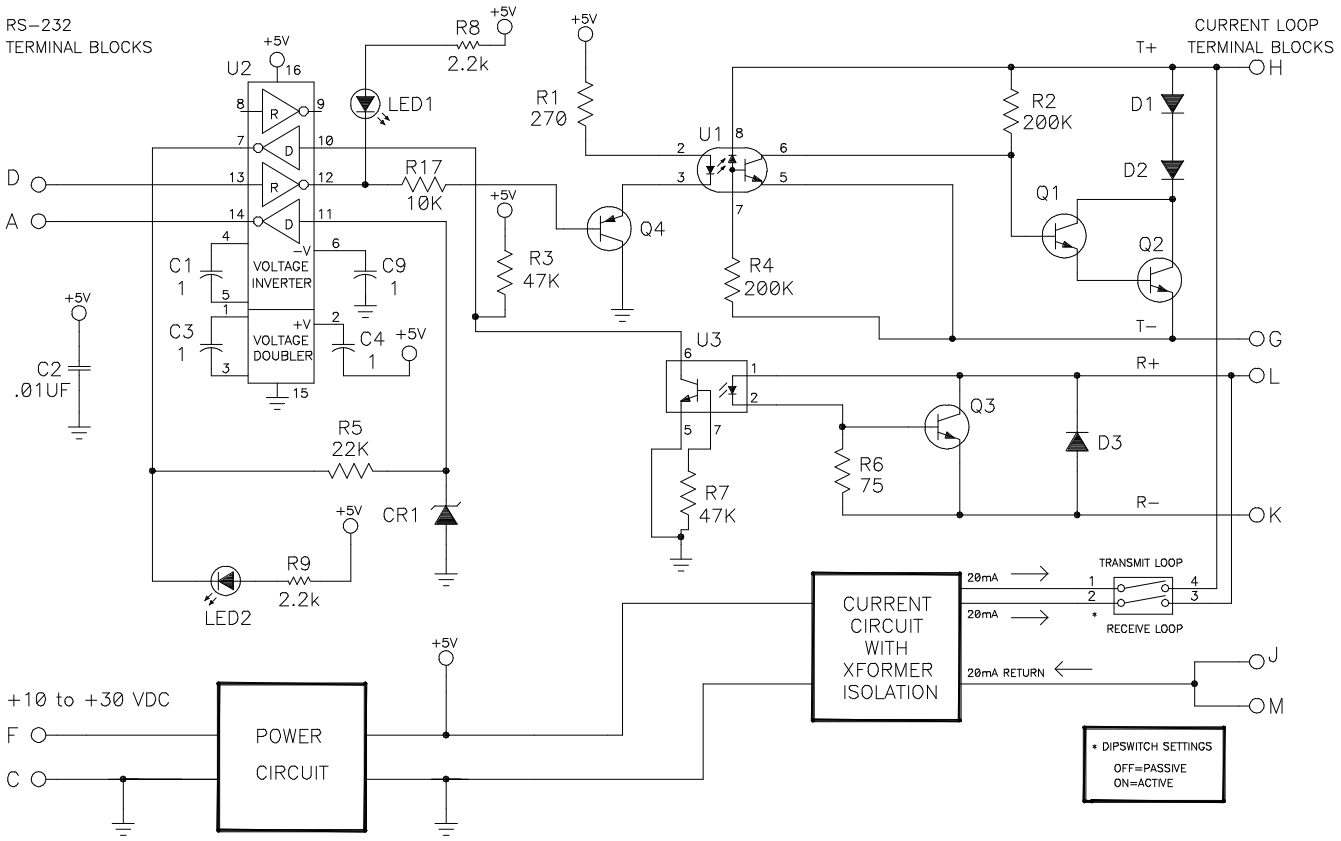


Figure 7. ICD101A Schematic

Model Number:	ICD101A
Description:	DIN Mount RS-232 to Current Loop Converter
Type:	Light industrial ITE equipment
Application of Council Directive:	89/336/EEC
Standards:	EN 55022 EN 61000-6-1 EN 61000 (-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11)

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