



**Research  
Design Lab**



## **4 Channel 4-20mA Current Loop Receiver**

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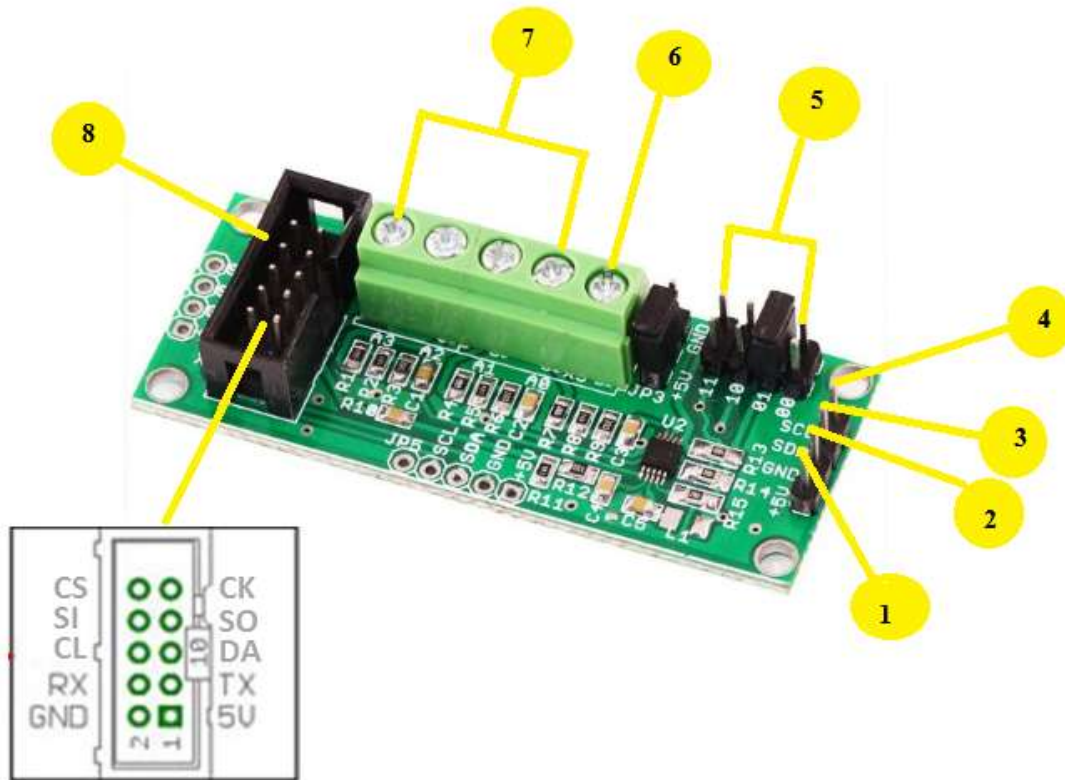
## 1. Overview

The 4 Channel 4-20mA Current Loop Receiver offers a solution for applications in which it is necessary to measure sensors with 4mA to 20mA output with high precision and solution. There is a large number of sensors with output ranging from 4mA to 20mA available on the market (they are commonly called transmitters). The most common ones are the pressure sensor, the temperature sensor, the humidity sensor, among others. Sensors with output ranging from 4mA to 20mA are largely used in industrial processes.

## 2. Features

- Measurement of up to 4 sensors per module.
- Low current Consumption :150uA
- I2C Interface : Four Pin Selectable Addresses.
- Wide Supply Range :2.0 V to 5.5 V.
- 860 Samples per seconds.

### 3. Narration



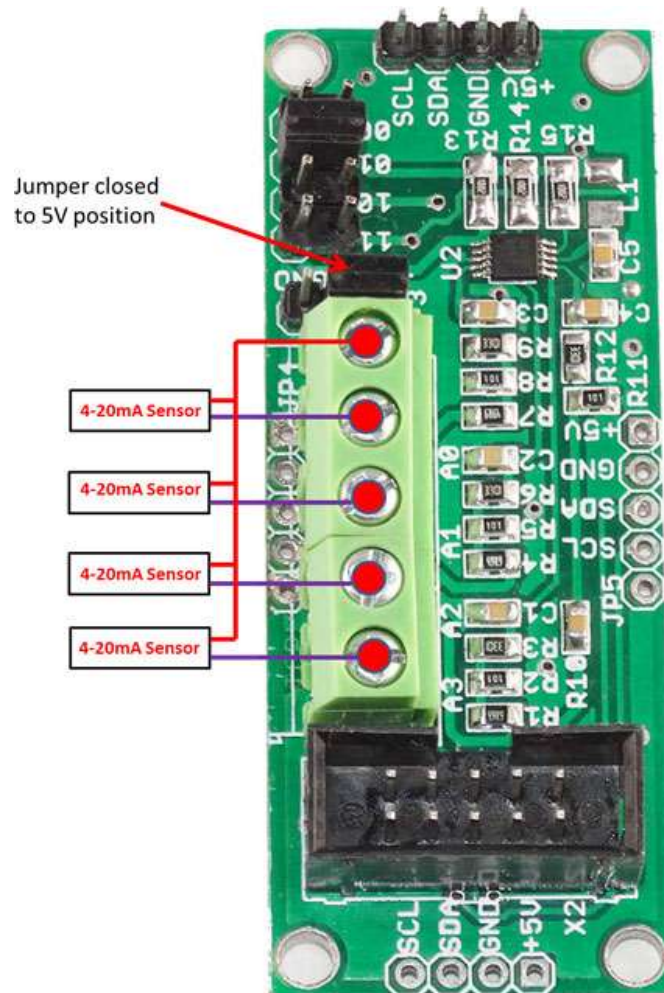
1. 5V Output
2. GND
3. SDA
4. SCL
5. I2C Address Selection Jumpers
6. SUP
7. 4 Independent Analog Inputs
8. FRC Connector

## 4. Connection Details

There are two ways to power the sensor. The first is by using the same power supply that powers Arduino. The second is using an exclusive power supply for powering the sensor. The choice of the use mode is made using jumper selection, named as SUP.

- **Sensors Powered by only one Power Supply**

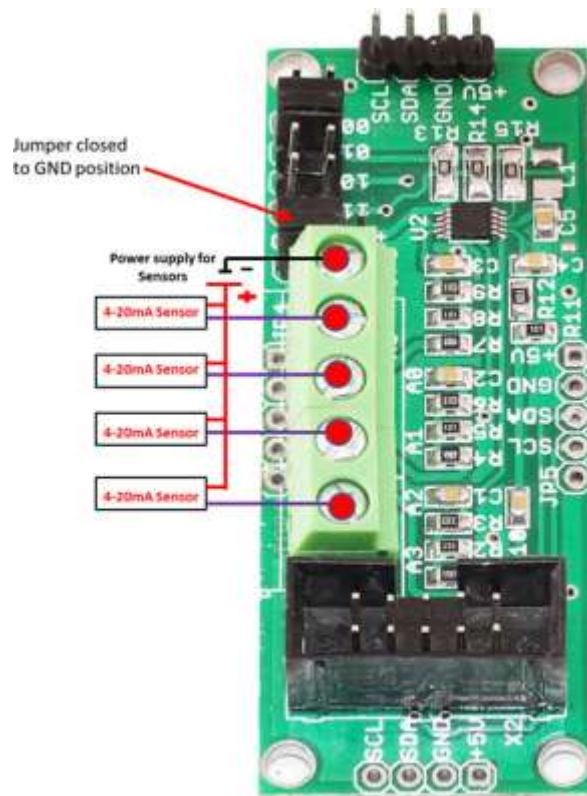
In this setup, the power supply to Arduino is the same that powers the sensor. In order to use this setup, it is necessary to close the configuration jumper SUP on the VIN position. This way, the supply voltage (VIN) on Arduino is directly connected to the SUP terminal on the screw terminal and powers the sensor directly.



- **Connecting the Sensors with an Independent Power Supply**

In this kind, the sensor is powered by an exclusive power supply. That is you will use the power supply for the sensors and another for the Arduino. This set up is useful when the sensor require supply voltage that is different from the Arduino Standard (7V to 12V). We can mention as an example the sensors that need to be powered by 24V Supply. In this case you can use 24V Power Supply for the sensors and power the Arduino with Standard power supply of 7V to 12V, or through the USB Port.

In order to use this setup, it is necessary to close the configuration jumper SUP On GND Position.





## 5. Interfacing Arduino UNO and 4 Channel 4-20mA Current Loop Receiver

