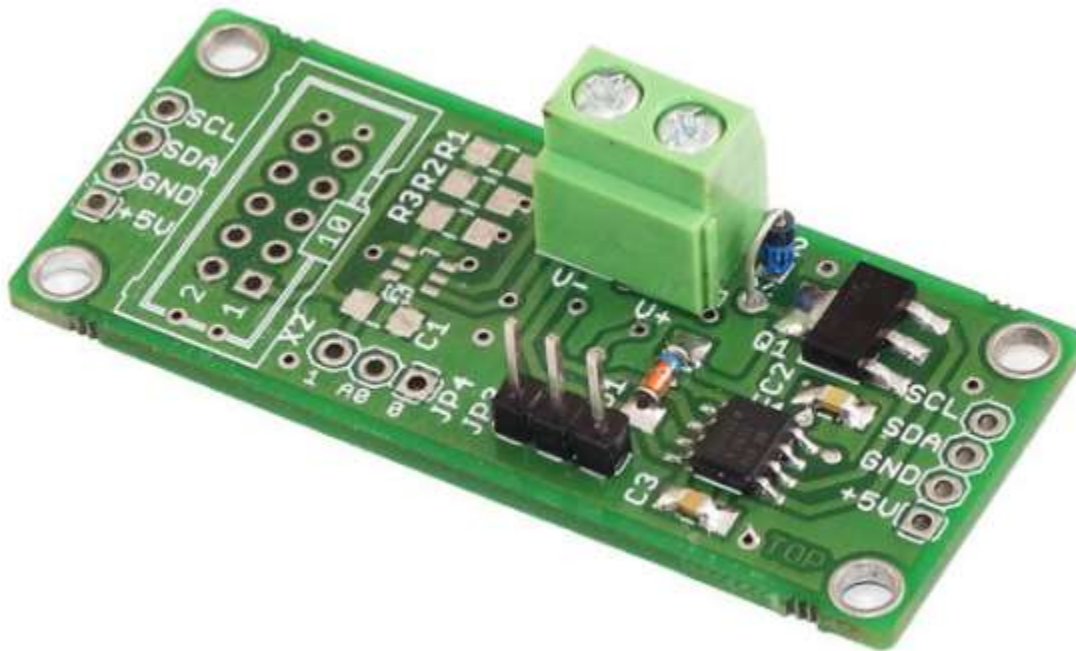




**Research  
Design Lab**



## **4-20mA Current Loop Transmitter XTR116U with Analog Input**

## Contents

Contents .....	2
1. Overview .....	3
2. Features.....	3
3. Application .....	3
4. Specification .....	4
5. Testing Application Circuit .....	5
6. Practical Interfacing Circuit.....	6
7. Documents .....	8

## 1. Overview

The XTR116 are precision current output converters are designed to transmit analog 4-to-20mA signals over an industry standard current loop. They provide accurate current scaling and output current limit functions.

## 2. Features

- Low Quiescent Current: 200 $\mu$ A
- 5V regulator for external circuits.
- VREF for sensor excitation:XTR116: 4.096V
- Low span error: 0.05%
- Low nonlinearity error: 0.003%
- Wide loop supply range: 7.5V to 36V
- SO-8 Package
- I2C Interface.

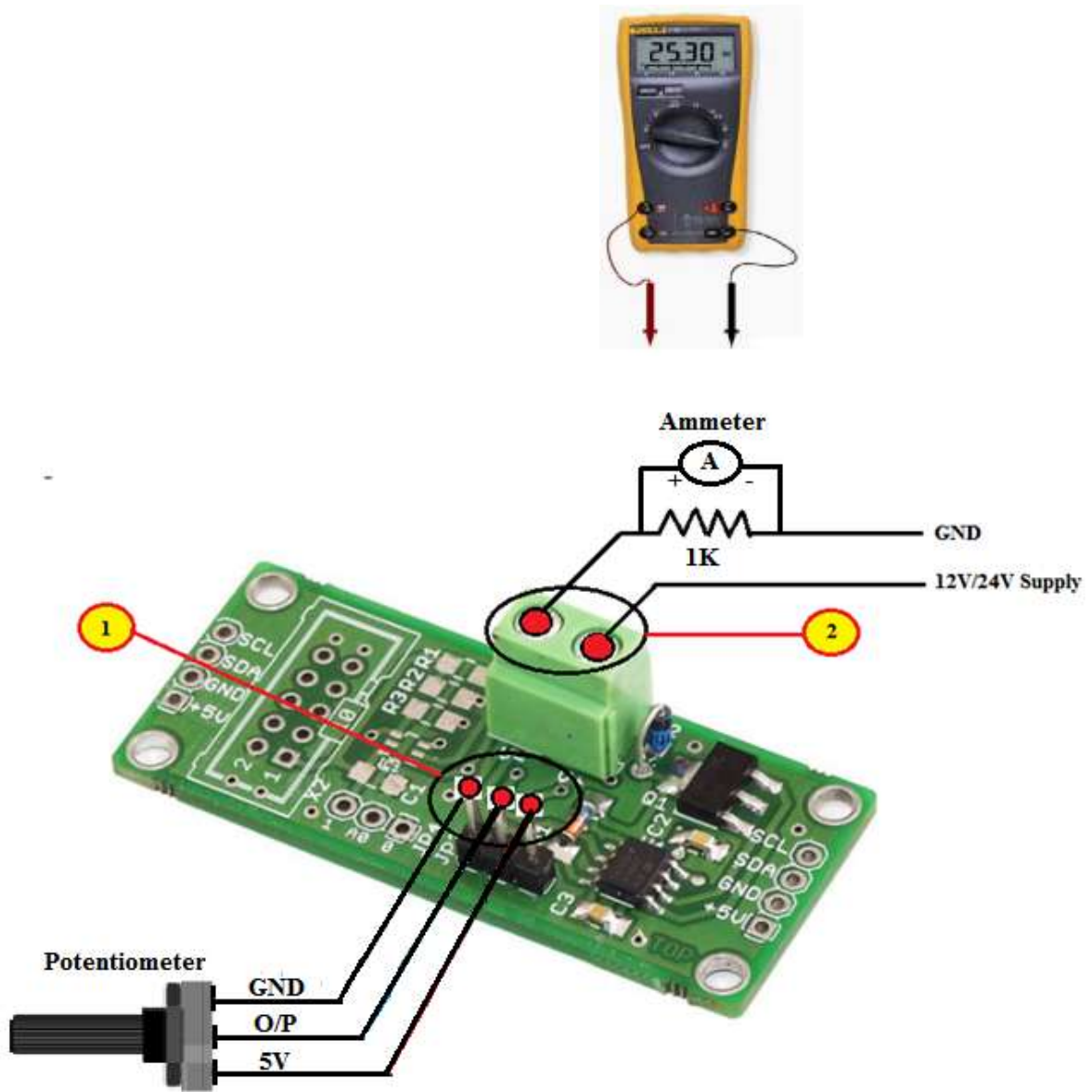
## 3. Application

- 2-Wire, 4-20mA Current Loop Transmitter
- Smart Transmitter
- Industrial Process Control
- Test Systems
- Compatible with Hart Modem
- Current Amplifier
- Voltage-To-Current Amplifier.

## 4. Specification

Supply Voltage	7.5 V ~ 36 V
Reference Voltage	4.096V
Temperature Range	-40°C to +85°C
Low Quiescent Current	200μA
Wide Loop Supply Range	7.5V to 36V
Current Gain	100
Noise	0.1Hz to 10 Hz
Small Signal Bandwidth	380 KHz
Slew Rate	3.2 mA/μs

## 5. Testing Application Circuit

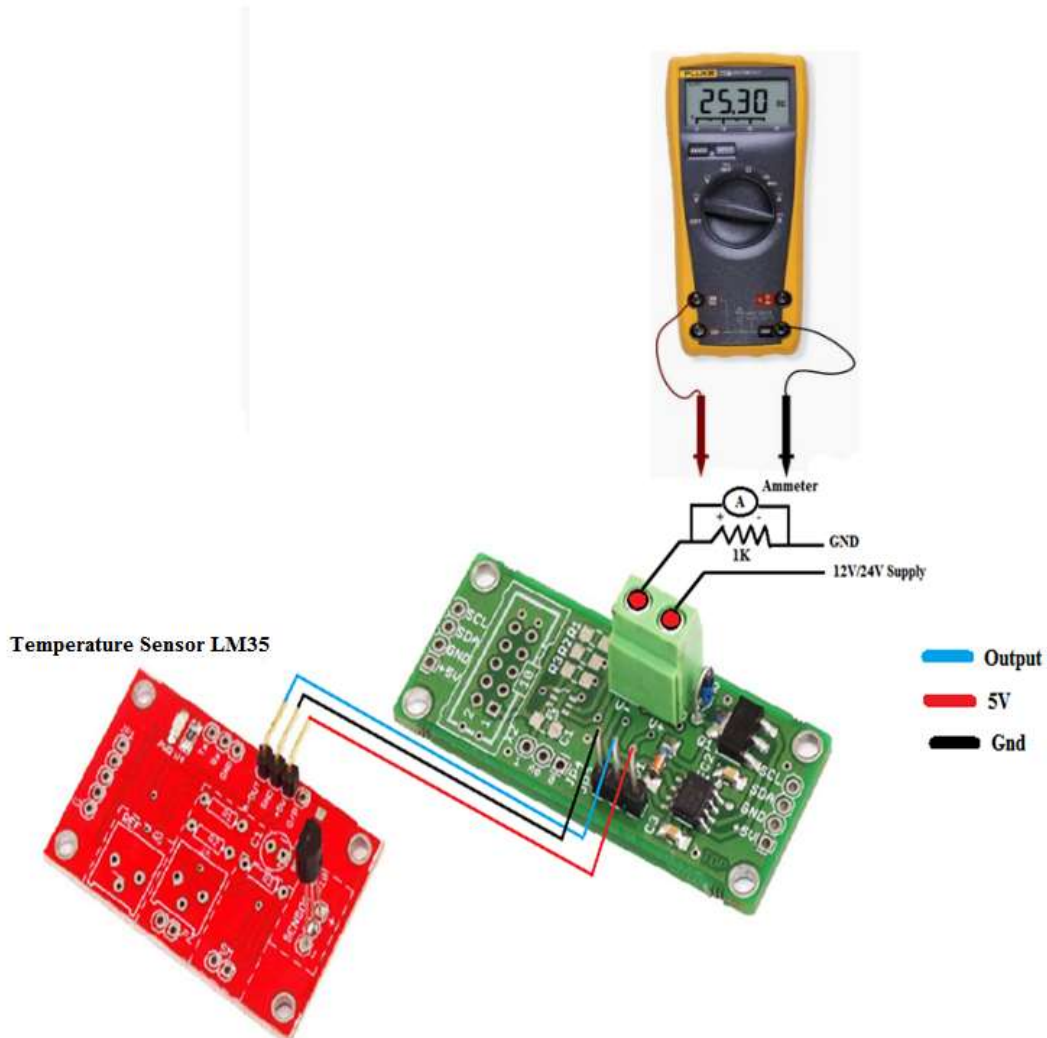


1. Analog Input Pins
2. Output

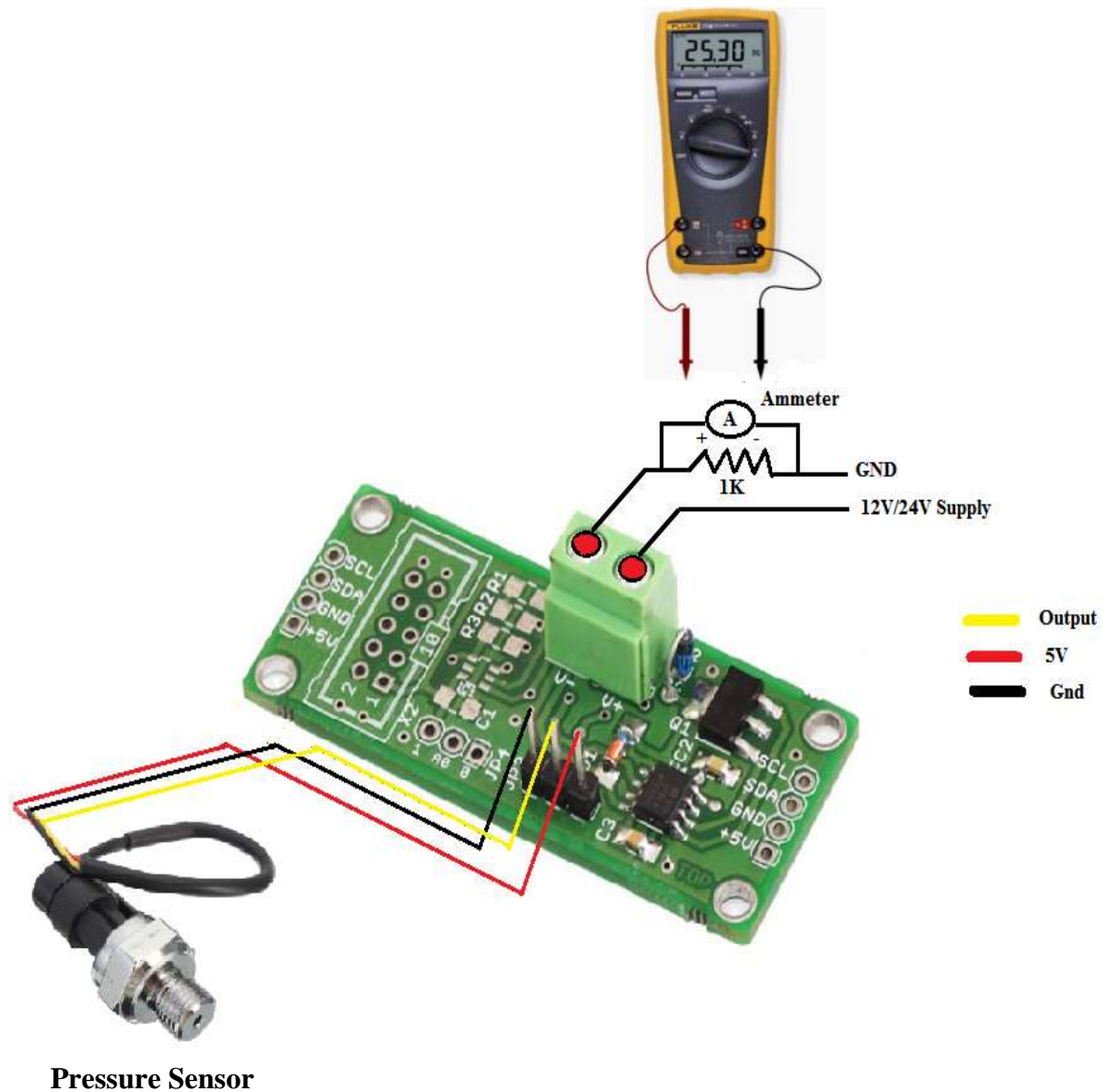
Note : For 0.8V-4.2V Voltage variation, 4-20mA current will obtain at the output.

## 6. Practical Interfacing Circuit

- Interfacing Analog Temperature Sensor(LM35) and 4-20mA Current Loop Transmitter XTR116U with Analog Input



- Interfacing Pressure Sensor and 4-20Ma Current Loop Transmitter XTR116U with Analog Input



## 7. Documents

- XTR116U Datasheet  
<https://researchdesignlab.com/projects/XTR116U.pdf>