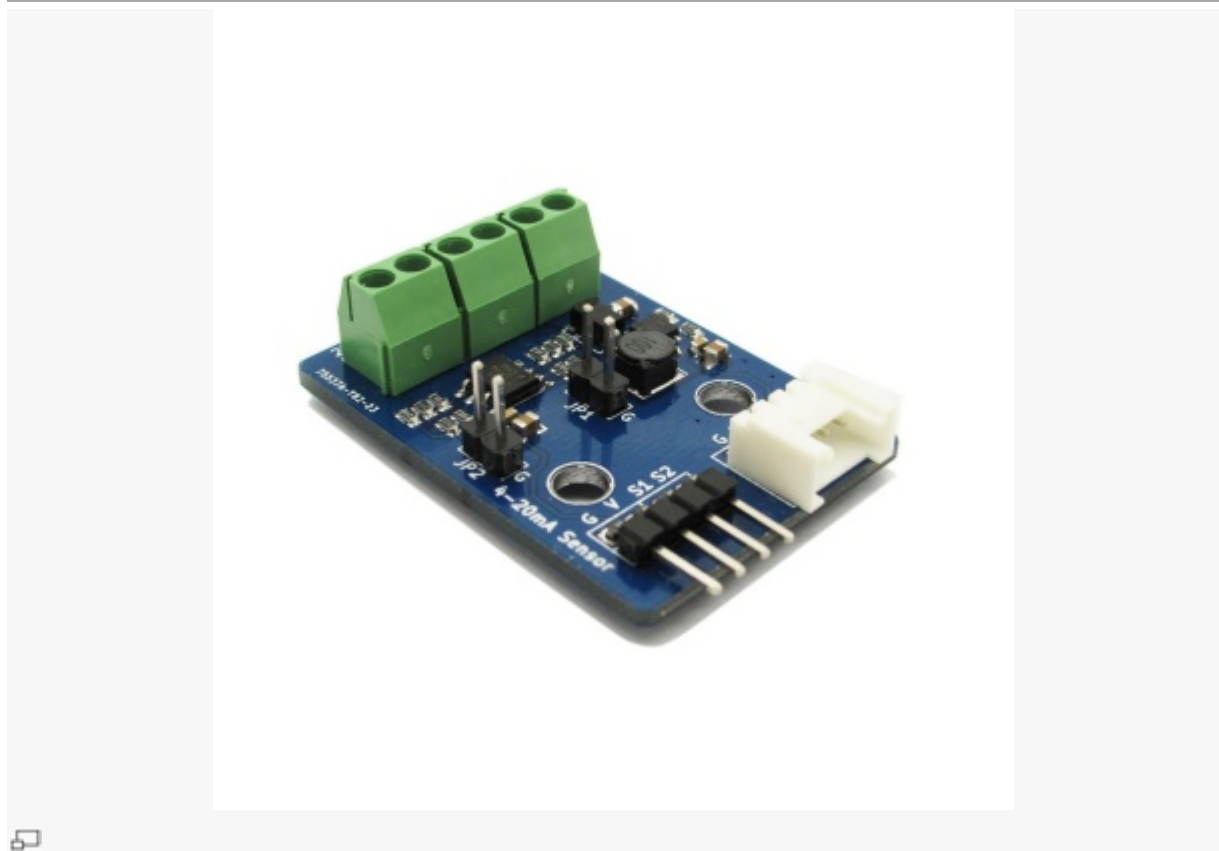# 4-20mA Sensor Brick

Overview

4~20mA Sensor Brick is an electronic brick module that can be used to test electronic current loop from 4mA to 20mA and support type2,3,4 current output. With a 5V to 24V DC-DC power boost convertor, its max current output can be 150mA, which can be for equipment use.

Features

- Compatible with the mainstream 2.54 and 4-pin Grove interface in market

- Compatible with type2,3,4 electronic current loop

- With use of M4 standard fixed holes, compatible with M4-standard kits such as Lego and Makeblock.
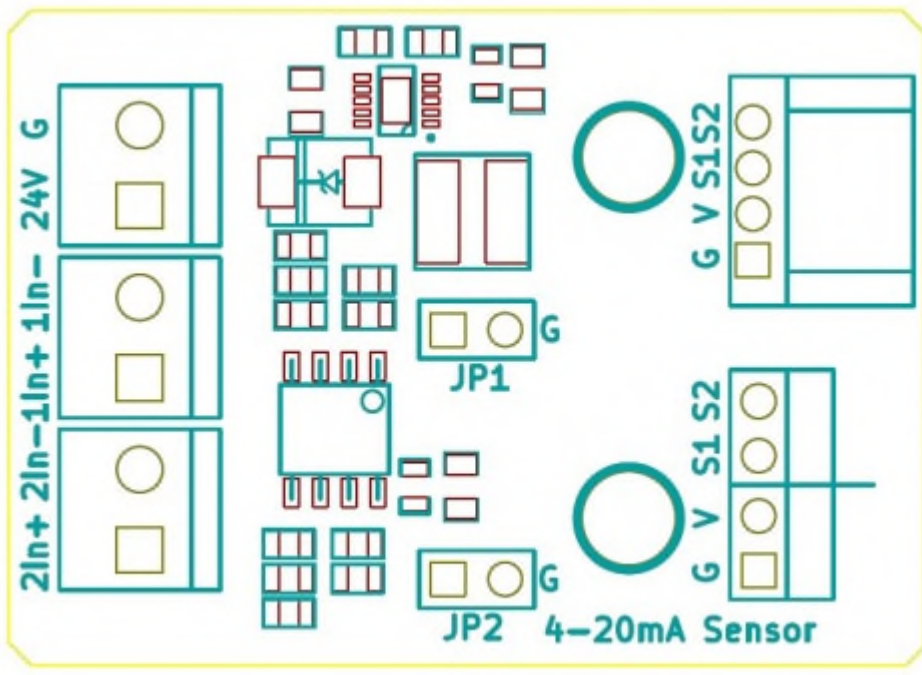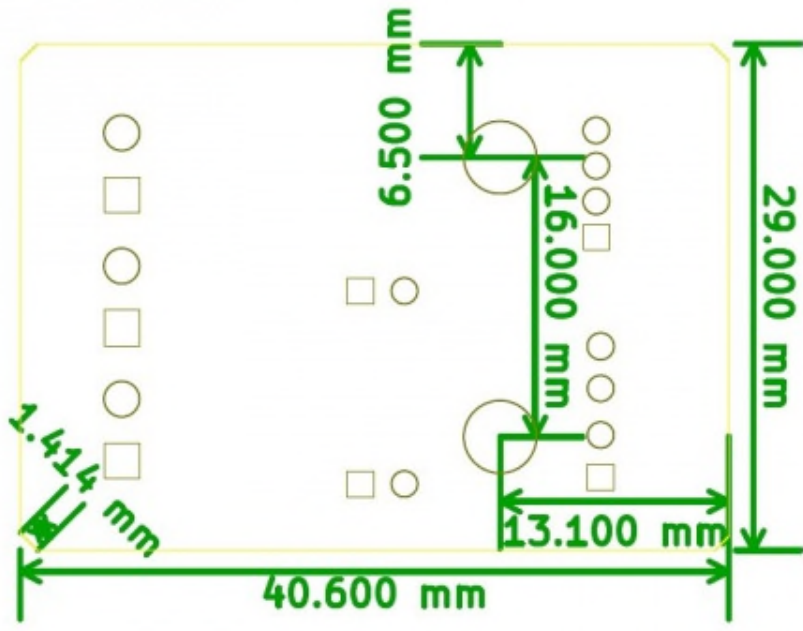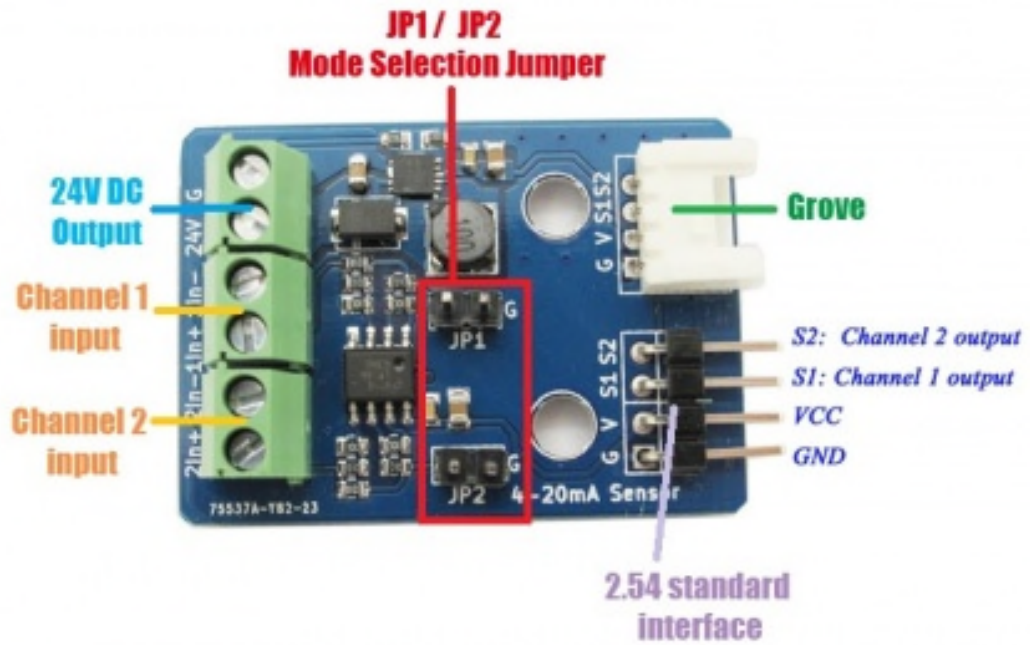
Specification

PCB size	40.6mm X 29mm X 1.6mm
Power supply	5V DC
Compatible interfaces	2.54 4-pin interface and 4-pin Grove interface(1)

Electronic Characteristics

Parameter	Min.	Typical	Max.	Unit
Power supply	4.5	5	5.5	VDC
Input measurement current	4	-	20	mA
Output Current(DCDC)	-	-	150	mA

Hardware

6.500 mm

16.000 mm

29.000 mm

1.414 mm

13.100 mm

40.600 mm

2In+ 2In− 1In+ 1In− 24V G

JP1   G

JP2   G

G V S1 S2

G V S1 S2

4−20mA Sensor

	JP1	**JP2**
Connected	CH1 Type 2/3	CH2 Type 2/3
Disconnected	CH1 Type4	CH2 Type4

Loop current type

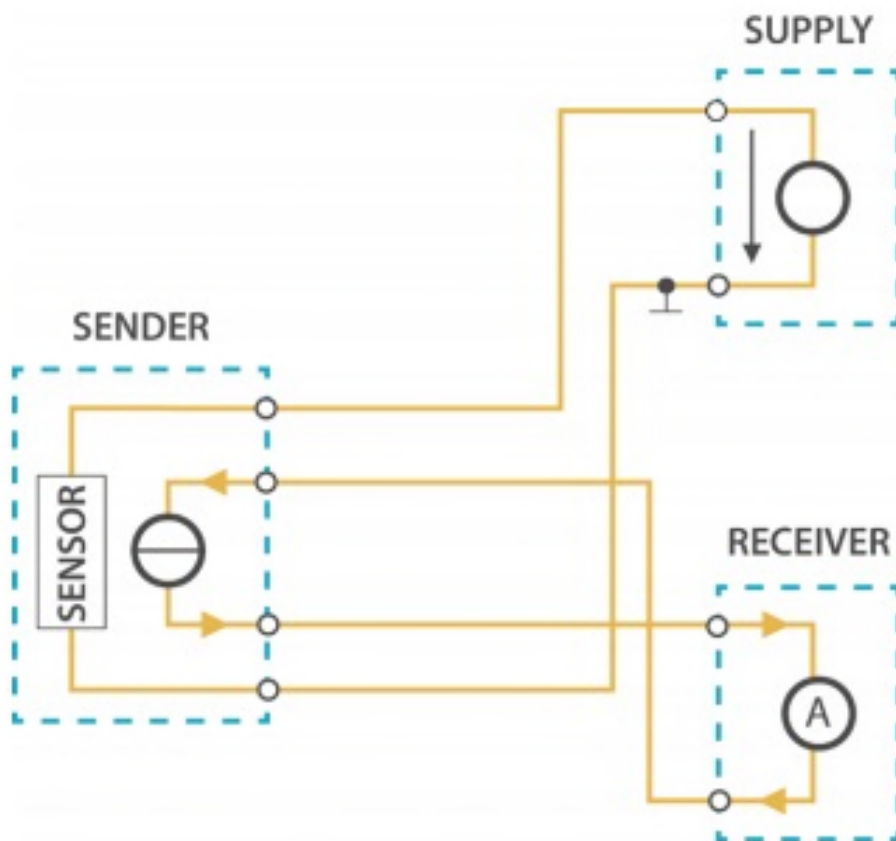- **Type 2 loop current**

POWER SUPPLY   SUPPLY

SENDER

RECEIVER
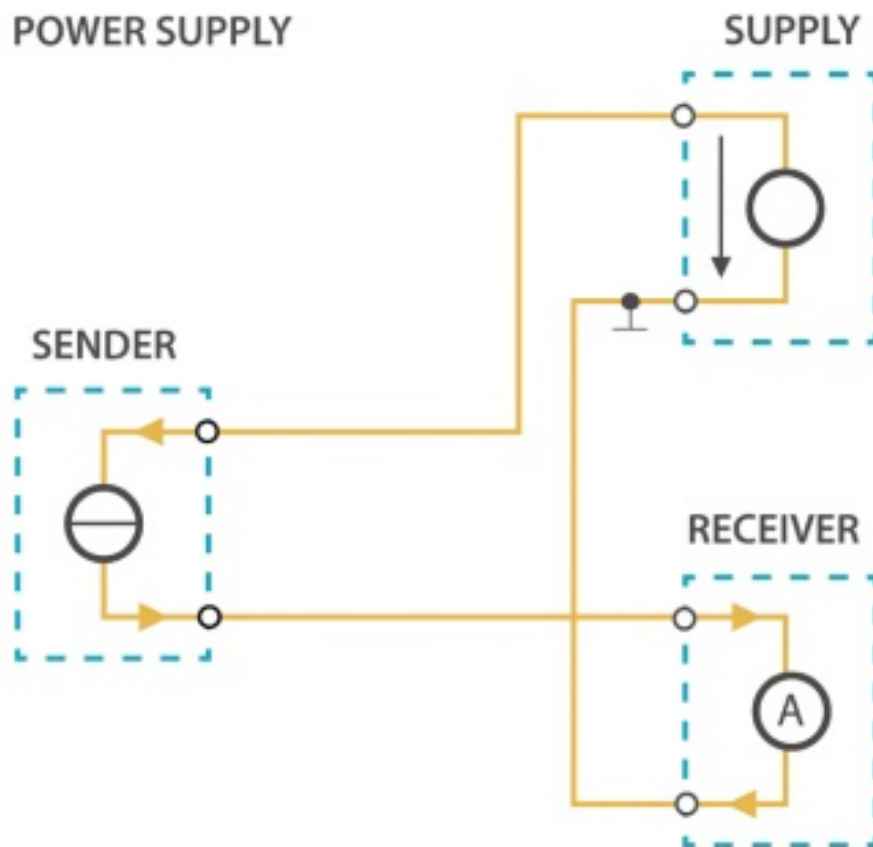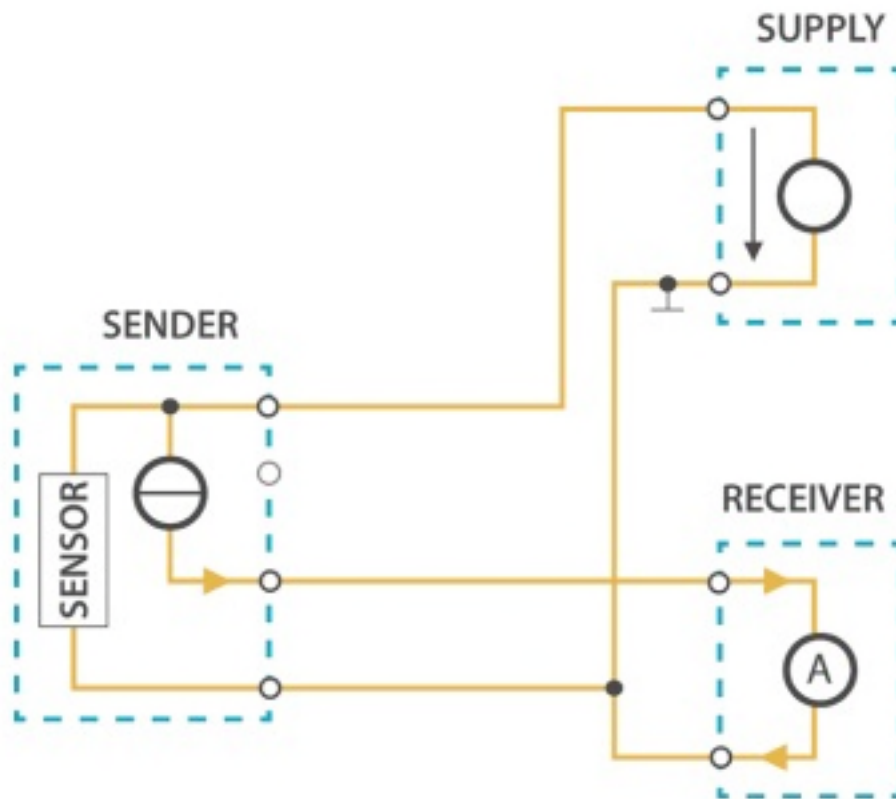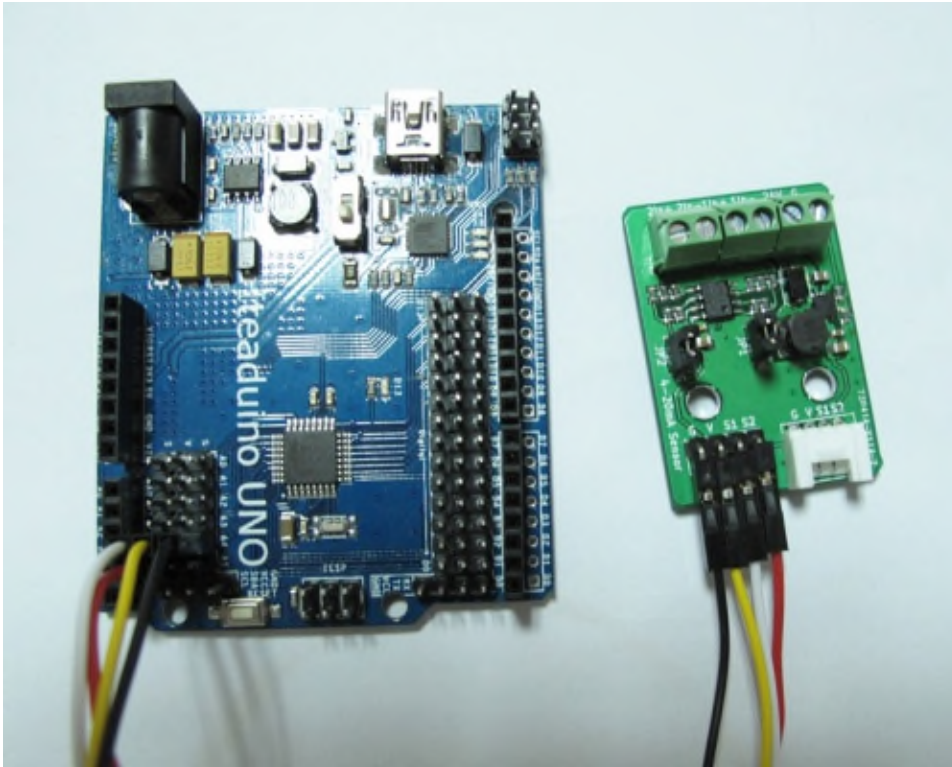
- **Type 3 loop current**

- **Type 4 loop current**

The relationship between output voltage and input current in channel 1,2

- In theory, their relationship can be described into this formula: U= 100×I×2
- Note: error ±2% in practical test.

Instruction

1. Upload the demo 4~20mA Demo (zip file) into Iteaduino UNO

2. Connect the sensor brick and UNO as following picture. S1->A4 and S2->A5.

- 3. Measure current loop

When access in type2,3 loop current, please connect JP1 or JP2, both 1In- and 2In- is equal to connecting ground, 1In+ and 2In+ are connected with the current pins to be measured.

When access in type4 loop current, connect the input end to 1In+ or 2In+, the output end to 1In- or 2In-, and unplug JP1 or JP2 simultaneously.