VOLTAGE DIVIDER

DESCRIPTION

The Voltage Divider provides an interface for measuring extern voltage, eliminating the need to connect a resistance to input interface. Besides, the voltage gain can select by dial switch. They are easy to use.

FEATURES

- Extern Voltage Interface and Grove Interface
- Easy to use
- Can adjust the gain

SPECIFICATION

Item		**Min**	**Typical**	**Max**	**Unit**
Working Voltage		4.7	5.0	5.3	VDC
Measurement Accuracy		<=1			%
Extern Voltage Range	select 3	0.3	/	12.9	V
	Select 10	1.0	/	43	
Dimension		24X20			mm

USAGE

When measuring the external voltage, connect the external voltage to J1 and then connect the on-board Grove connector to analog port of Arduino

Connect the module to A0 port.

- Arduino In order to test the precision of this module, I tested some voltage inputs and get the following data:

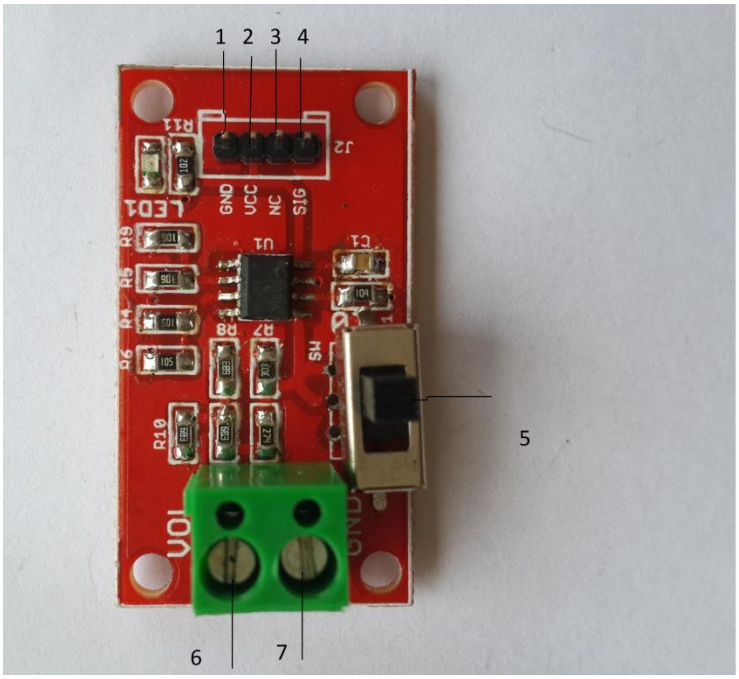
	Input Voltage(V)	Outout Voltage(V)	Measurement accuracy	
Gain 10	0	0.05		
	0.7	0.08	14.20%	NO
	0.8	0.08	0	
	0.9	0.091	0.10%	
	1	0.101	1%	
	5	0.496	0.80%	
	8	0.795	0.60%	
	10	0.99	1%	OK
	15	1.495	0.33%	
	18	1.793	0.38%	
	25	2.49	0.40%	
	28	2.791	0.32%	
	30	2.98	0.67%	
	33	3.28	0.60%	
Gain 3	0.21	0.081		NO
	0.24	0.081	1.25%	
	0.27	0.091	1%	
	0.3	0.101	1%	
	0.8	0.264	1%	
	1	0.331	0.60%	
	3	0.99	1%	
	5	1.664	0.16%	OK
	8	2.66	0%	
	10	3.33	0.00%	
	12	3.99	0.25%	
	13	4.321	0.28%	
	13.2	4.39	0.22%	
	14	4.471	4.30%	NO

- As you can see, when the inputs were in the measuring range, the voltage divider has a high accuracy (<1%, that i marked an "OK"). But as the inputs were not in the range, the accuracy gets low (i marked a "NO") Please see Specification about the specific measurement range.

And When voltage divider output voltage is higher than VCC (The Grove Operating Voltage and reference of analog read), an indicator will light up to show you the error.

- Using the serial monitor of Arduino, you can measure the input voltage value. Demo code as show below:

VOLTAGE DIVIDER IMAGE



1. GND - Ground Pin
2. VCC - Power Supply 5v
3. NC - Not Connect
4. Sig - Connect to Microcntroller ADC PIN
5. SW - Mode Switch for Gain-3 and Gain-10
6. Vol - Voltage IN
7. Gnd - Ground IN