



## Ks0087 keyestudio DIY Electronic Scale

### Introduction:

Electronic scale is commonly seen in our daily life, with function of weighting. Professional scales on market have more functions with higher precision. Is there any possibility for enthusiasts to DIY their own electronic scale with what they have learned? Absolutely you can! It is easy to make an open source electronic scale. You just need a weighting module, an AD chip (hx711) specialized in weighting and an Arduino with corresponding library. Everything becomes so easy!

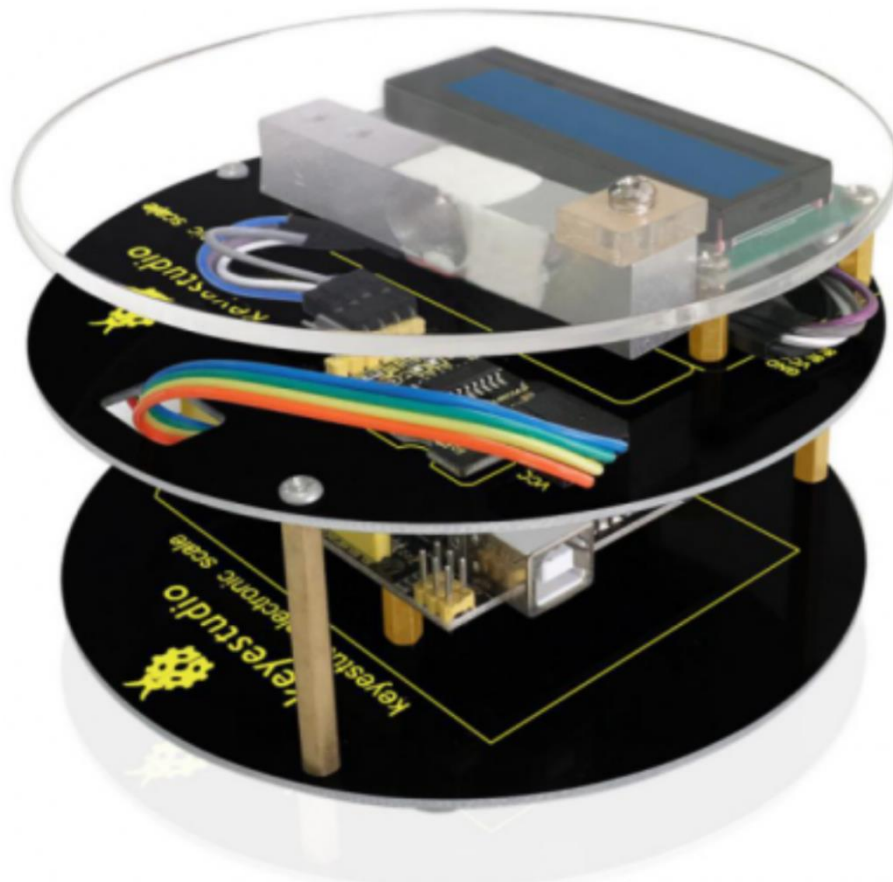
### Principle:

Electronic scale weigh force according to slight deformation causing by pressing metal. It uses the most commonly used strain gauge to measure deformation. In a typical application, utilize the strain gauge adhered on face of this sensor, to measure the force bore by the sensor.

HX711 is a chip of 24 bit A/D converter, designed for high precision weighing sensor. Compared with other same-type chips, this chip is featured with high integration, quick response and strong anti-interference, integrated external circuit needed by other chips including stabilized voltage supply and on-chip clock oscillator.

It decreases cost of complete machine of the scale, and in the same time improve its performance and reliability. The interface and programs of this chip and MCU chip are very simple. All control signals are driven by pins, without programming register of inner chip. Input and select switch to choose arbitrarily channel A or B, connecting it to a low-noise programmable amplifier.

The gain in channel A is 128 or 64 bit, and its corresponding amplitude of different input signals in full loaded is respectively  $\pm 20\text{mV}$  or  $\pm 40\text{mV}$ . The gain in channel B is fixed 32, used to detect system parameters. Stabilized voltage supply offered by chip can directly supply power for external sensor and A/D converter, there no need for additional analog power on main board. Clock oscillator doesn't need any external device. Automatic reset simplifies initialization when opening up.



### Resources:

[https://wiki.keyestudio.com/Ks0087\\_keyestudio\\_DIY\\_Electronic\\_Scale](https://wiki.keyestudio.com/Ks0087_keyestudio_DIY_Electronic_Scale)