

Scales Kit

SKU:K121



Description

The Scales Kit is an electronic scale kit that uses four sets of half-bridge resistive strain gauges, with a total weighing capacity of up to **200kg**. It is paired with a high-precision 24-bit A/D converter chip, the **HX711**, which features a built-in low-noise programmable amplifier supporting gain adjustments of **32**, **64**, and **128**. When combined with the M5Stack main controller, it allows for the quick and easy construction of an IoT weighing application in just a few minutes.

Note: The Scales Kit requires a weighing panel to function, and the side length of the panel should not exceed 50cm.

Features

- Total kit capacity: 200kg
- HX711:
 - High-precision 24-bit ADC
 - Programmable gain amplification: 32, 64, and 128
 - 10SPS output data rate
- Half-bridge resistive strain gauges:
 - Output sensitivity: $1.0 \pm 0.1 \text{ mV/V}$
 - Non-linearity: 0.3%F.S
 - Comprehensive accuracy: 0.3%F.S
 - Zero-point output: $\pm 0.3 \text{ mV/V}$
 - Impedance difference between upper and lower strain gauges: 0.8Ω
 - Input/output impedance: $1000 \pm 5 \Omega$

Includes

- 4 x Half-Bridge Resistance Strain Gauge
- 1 x Unit Weight
- 1 x HY2.0-4P Cable (20cm)
- 4 x Double-Sided Adhesive Tape (39 x 20 x 0.8mm)
- 4 x Double-Sided Adhesive Tape (39 x 12 x 0.8mm)
- 1 x Sensor Wiring Terminal

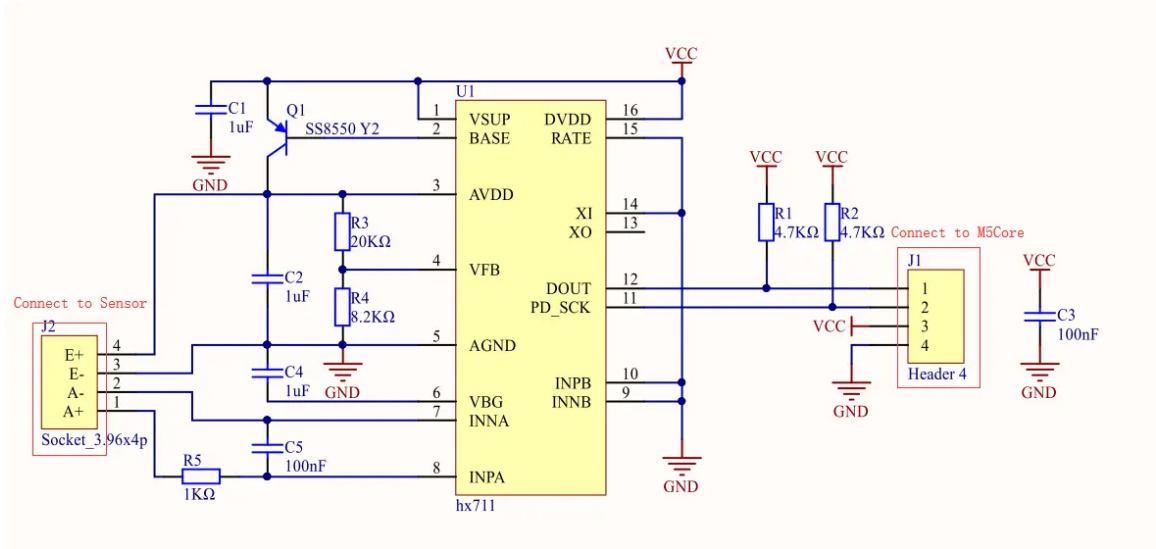
Applications

- Electronic scale design

Specifications

Specification	Parameter
HX711	Output Sensitivity: High-precision 24-bit ADC Programmable Gain Amplification: 32, 64, 128 10SPS Output Data Rate
Half-Bridge Resistive Strain Gauge	Output Sensitivity: $1.0 \pm 0.1 \text{ mV/V}$ Non-linearity: 0.3% F.S Overall Accuracy: 0.3% F.S Zero Output: $\pm 0.3 \text{ mV/V}$ Impedance Difference Between Upper and Lower Strain Gauges: 0.8Ω Output (Input) Impedance: $1000 \pm 5 \Omega$
Product Size	105.0 x 65.0 x 40.0mm
Product Weight	88.5g
Package Size	152.0 x 82.0 x 20.0mm
Gross Weight	113.2g

Schematics



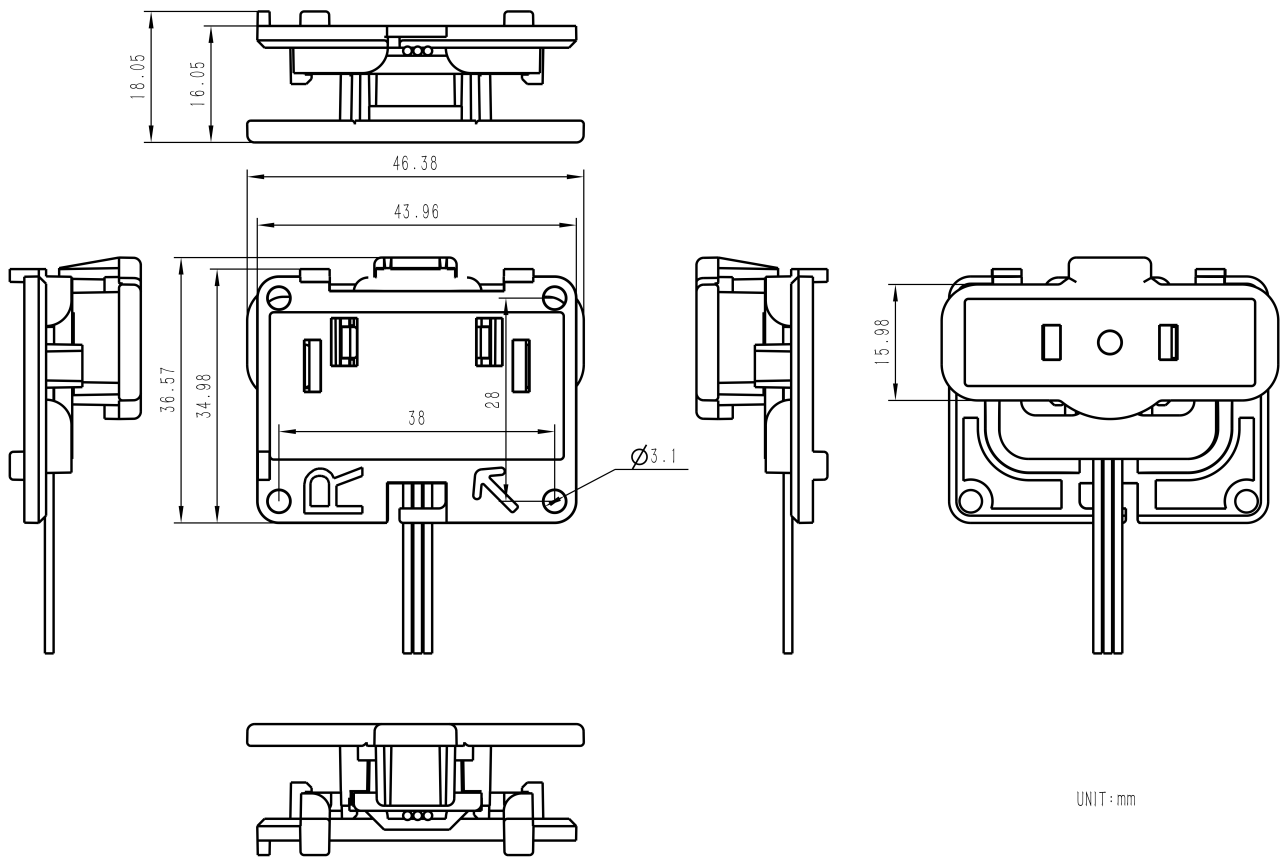
PinMap

Unit Weight

M5Core	G36	G26	5V	GND
Unit Weight	DATA Pin (DAT)	CLOCK Pin (CLK)	VCC	GND

Model Size

- [Scales kit Model Size PDF](#)



Datasheets

- [HX711](#)

Softwares

Arduino

- [HX711 Arduino Library](#)
- [Scales kit with M5Core](#)
- [Scales kit with M5Core2](#)
- [Scales kit with ATOM](#)
- [Scales kit with M5StickC](#)
- [Scales kit with M5StickC Plus](#)
- [Scales kit with CoreInk](#)
- [Scales kit with M5Paper](#)

Calibration Operation

Set the ADC chip GAIN=128, 10SPS output rate, and measure with a 5kg weight. The error is approximately $\pm 1\%$. Calibration is required before starting to weigh. Refer to the code below for calibration.

```
#include "HX711.h"
```

```
HX711 scale;

void setup() {
  // 1. Set the ADC value at 0g and set it as the offset
  scale.tare();
}

void loop() {
  // 2. Read the average ADC value with a standard weight (e.g., 5kg)
  long kg_adc = scale.read_average(20);
  // 3. Read the current offset at 0g
  kg_adc = kg_adc - scale.get_offset();
  // 4. Calculate and configure the scale parameter
  scale.set_scale( kg_adc / (5 * 1000.0));
}
```

Product Comparison

Product Compare					
	Unit Scales	Scales Kit	Unit Mini Scales	Unit Weight	Unit Weight-I2C
Communication Protocol	I2C	ADC	I2C	ADC	I2C
Chip Solution	STM32+HX711	HX711	STM32+HX711	HX711	STM32+HX711
Sensor Range	0 ~ 20kg	0 ~ 200kg	0 ~ 5kg	Depends on the strain gauge and controller chip	Depends on the strain gauge and controller chip