

Unit Scales

SKU:U108



描述

Unit Scales 是一款提供 I2C 接口的 20 kG 一体化称重传感器单元，内部集成 **STM32F030** 主控、采集电路及 20 kG 称重传感器，内部采用 **HX711** 专用称重采集芯片，自带清零去皮功能按钮以及可编程 **RGB** 状态指示灯。用户通过 I2C 接口读取称重数据。该单元能为用户提供一体化高集成度的称重检测方案，可用于质量检测、计件、物件挪动检测等场景。

产品特性

- HX711:
 - 高精度 24bit ADC
 - 可编程增益放大 32, 64 and 128
 - 10SPS 输出数据速率
- I2C 接口
- 开发平台: Arduino, UiFlow (Blockly, Python)

包装内容

- 1 x Unit Scales
- 1 x HY2.0-4P Grove 连接线 (20cm)

应用场景

- 智能秤
- 厨房秤
- 物品计数装置
- 人体感应检测

规格参数

规格	参数
MCU	STM32F030F4P6
ADC	HX711
通信接口	I2C 通信 @ 0x26
LED	SK6812 (PA7 接口)
按键	PA2 接口
外壳材料	塑料
产品尺寸	56.0 x 40.0 x 41.0mm
产品重量	83.5g
包装尺寸	57.0 x 42.0 x 41.0mm
毛重	92.3g

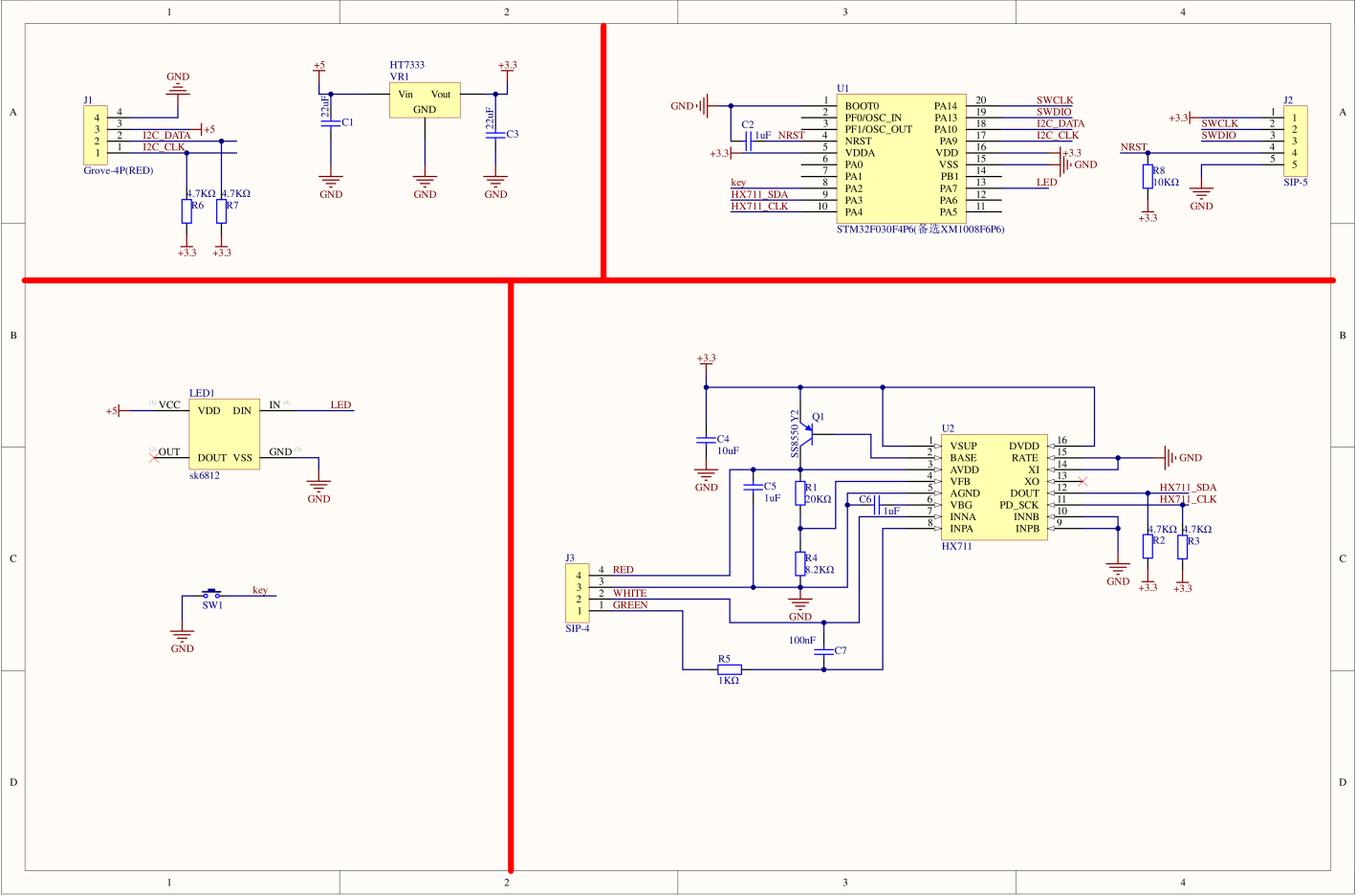
操作说明

Unit Scales 称重误差说明

重量 (g)	50	100	250	500	1000
绝对误差 (g)	0.45	0.25	0.20	0.25	4.15
相对误差	0.9%	0.3%	0.1%	0.1%	0.4%

原理图

- [Unit Scales 原理图 PDF](#)

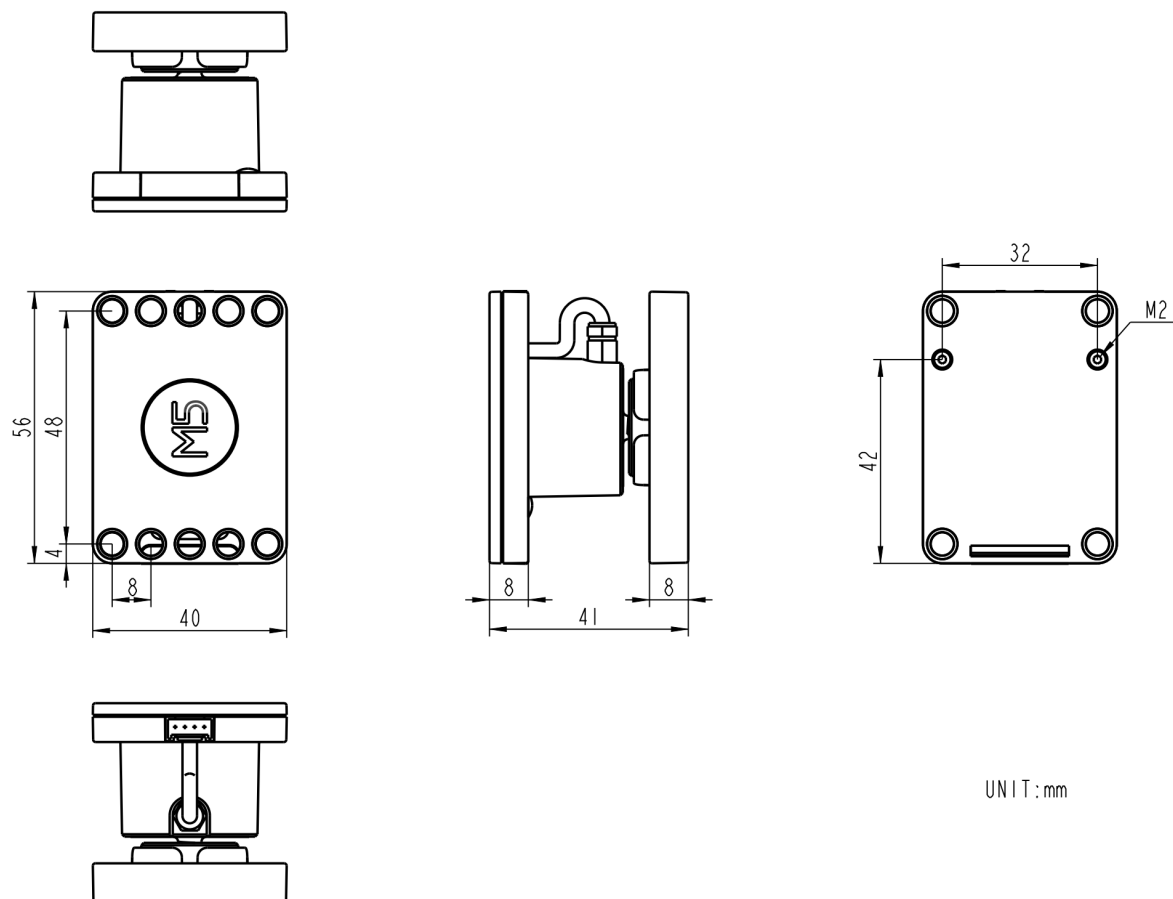


管脚映射

Unit Scales

HY2.0-4P	Black	Red	Yellow	White
PORT.A	GND	5V	SDA	SCL

尺寸图



结构文件

- [Unit Scales 结构文件](#)

数据手册

- [HX711](#)

软件开发

Arduino

- [Unit Scales Arduino 驱动库](#)
- [Unit Scales Arduino 使用教程](#)
- [Unit Scales Test Example with M5Core](#)
- [Unit Scales Test Example with M5Atom](#)

UiFlow1

- [Unit Scales UiFlow1 文档](#)

UiFlow2

- [Unit Scales UiFlow2 文档](#)

内置固件

- Unit Scales 内置固件

通讯协议

- Unit Scales I2C 通信协议

M5Stack Unit Scales I2C Protocol																V1 (FW Version)			
REG MAP (Addr: 0x26)																2022/9/9			
Scales Parameters		0x10 R	RawADC -byte0	1 RawADC -byte1	2 RawADC -byte2	3 RawADC -byte3	4 Cal Data -byte0	5 Cal Data -byte1	6 Cal Data -byte2	7 Cal Data -byte3	8 Offset -byte0	9 Offset -byte1	A Offset -byte2	B Offset -byte3	C	D	E	F	note
																			Cal Data = (Offset - RawADC) / (Scale*10000) *Weight measurement range
Configuration	0x20	Press Count	Press Status	Long Press Count	Press Offset	ADC Offset	LED Sync Weight												Press Count: Button press count value: 0~255 Press Status: Button press status value: 0~255 Long Press Count: Long press count value: 0~255 Press Offset: Enable to set offset 0: disable 1: enable ADC Offset: set current ADC to offset 0: fail 1: succeed LED Sync Weight: Brightness varies following weight 0: disable 1: enable
		R				R/W													
Calculator Configuration	0x30 R/W	0g -byte0	0g -byte1	load -byte0	load -byte1														0g: Calibration point value: 0~65535 default: 0 load: Tare weight (unit: 10mg) value: 0~65535 default: 0
RGB LED Color Configuration	0x50 R/W	RGB_R	RGB_G	RGB_B															RGB_R/G/B: RGB value value: 0~255 default: 0
Firmware Version	0xF0 R														Version				Version: Software Version
I2C Address	0xF0 R/W														Address				Address: I2C Address value: 0x01~0x80 default: 0x26
Register Description 1. Scales Parameters Relevant parameters for weighing. 2. Configuration: Certain settings related to buttons, ADC, and RGB LEDs Configuration content includes: Press Count - Button press count Press Status - Button press status, pressed or released Long Press Count - Button long press count Press Offset - Enable/Disable press button to set offset ADC Offset - Software set current ADC to set offset LED Sync Weight - RGB LED brightness varies following weight 3. Calculator Configuration 0g calibration points and calculation of net weight after removal of skins. 4. RGB LED Color Configuration Enables RGB and sets its brightness. Note that after enabling RGB, wait approximately 50ms for voltage stabilization before refreshing it. 5. I2C Address After successful configuration, the I2C address will be stored in internal Flash memory, will not be lost during power-down, and will take effect immediately.																			
Notes: 1. To extend the lifespan of the Flash, avoid frequent write operations. 2. If the value to be written is the same as the current value stored in Flash, the write operation will be skipped to avoid unnecessary erase cycles, further extending the Flash's lifespan.																			

EasyLoader

Easyloader	下载链接	备注
Unit Scales Test Easyloader	download	/

相关视频

产品对比

产品对比表					
    	Unit Scales	Scales Kit	Unit Mini Scales	Unit Weight	Unit Weight-I2C
	通信协议	I2C	ADC	I2C	ADC
	芯片方案	STM32+HX711	HX711	STM32+HX711	HX711
	传感器量程	0~20kg	0~200kg	0~5kg	取决于应变片与控制芯片
				取决于应变片与控制芯片	取决于应变片与控制芯片