

Voltmeter Unit

SKU:U087



Description

Voltmeter Unit is a voltage meter that can monitor the voltage in real time. The 16-bit ADC (analog-to-digital) converter ADS1115 is used internally to communicate through I2C (0X49).

In order to ensure the measurement accuracy, there is a built-in DC-DC isolated power supply, and the I2C interface is also electrically isolated through the low-power isolator CA-IS3020S.

This prevents noise and surges on the data bus or other circuits from entering the local ground terminal to interfere or damage sensitive circuits. Each Unit is individually calibrated when leaving the factory, initial accuracy of 0.1%FS, ± 1 count, and a maximum measurement voltage of $\pm 36V$.

EEPROM (0x53) has built-in calibration parameters when leaving the factory. Please do not write to the EEPROM, otherwise the calibration data will be overwritten and the measurement results will be inaccurate.

Product Features

- $\pm 36V$ range
- LED power indicator
- 16-bit ADC conversion
- Resolution: Auto range, Count $\leq 16V$, 1mV; Count $> 16V$, 7.9mV
- Initial accuracy 0.1%FS, ± 1 count
- Built-in CA-IS3020S isolation chip, anti-interference
- Isolated DC-DC
- Up to 1000 VRMS isolation withstand voltage
- Development platform: Arduino, UIFlow (under development)
- 2x LEGO compatible holes

Includes

- 1x Voltmeter Unit
- 1x Grove Cable(20cm)

Application

- voltmeter

Specification

Resources	Parameter
Resolution	Auto range, Count $\leq 16V$, 1mV; Count $> 16V$, 7.9mV
Measuring range	$\pm 36V$
Initial Accuracy	0.1%FS, ± 1 count
Communication protocol	I2C: 0x49
Net Weight	9g
Gross Weight	24g
Product Size	65*24*8mm
Package Size	67*53*12mm

Measurement Range Gain Setting

Different range resolution is different, the error value of the result is different, please set the appropriate range according to the needs. Do not write EEPROM. If you really want to save the custom calibration values to EEPROM, Using the following statement, the factory data will be lost once written

```
bool Voltmeter::saveCalibration2EE
```

```
//@Parameter: voltmeterGarin_t gai
#####
# // | PAG | Max Input Voltag
# // | PAG_4096 | 128
# // | PAG_2048 | 64
# // | PAG_1024 | 32
# // | PAG_512 | 16
# // | PAG_256 | 8
#####
//@Parameter: int16_t hope // Set
//@Parameter: int16_t actual //ADC
```

Voltage measurement range	Maximum input DC voltage(V)	Minimum resolution(mV)	Gain factor
PAG_4096(Calibrated)	±128	7.85	0.125
PAG_256(Calibrated)	±8	0.49	0.007813

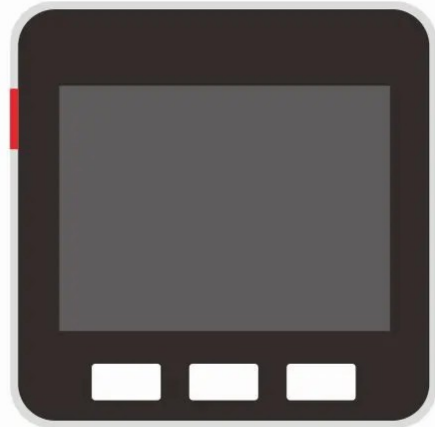
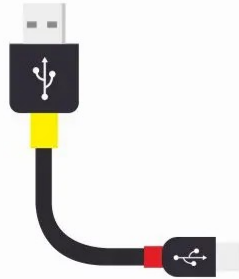
| EasyLoader

EasyLoader is a concise and fast program writer, which has a built-in case program related to the product. It can be burned to the main control by simple steps to perform a series of function verification. Please install the corresponding driver according to the device type. M5Core host [Please click here to view the CP210X driver installation tutorial](#), M5StickC/V/T/ATOM series can be used without driver)

2, Select COM



1, Downloads



Core \ M5StickC \ M5StickV...

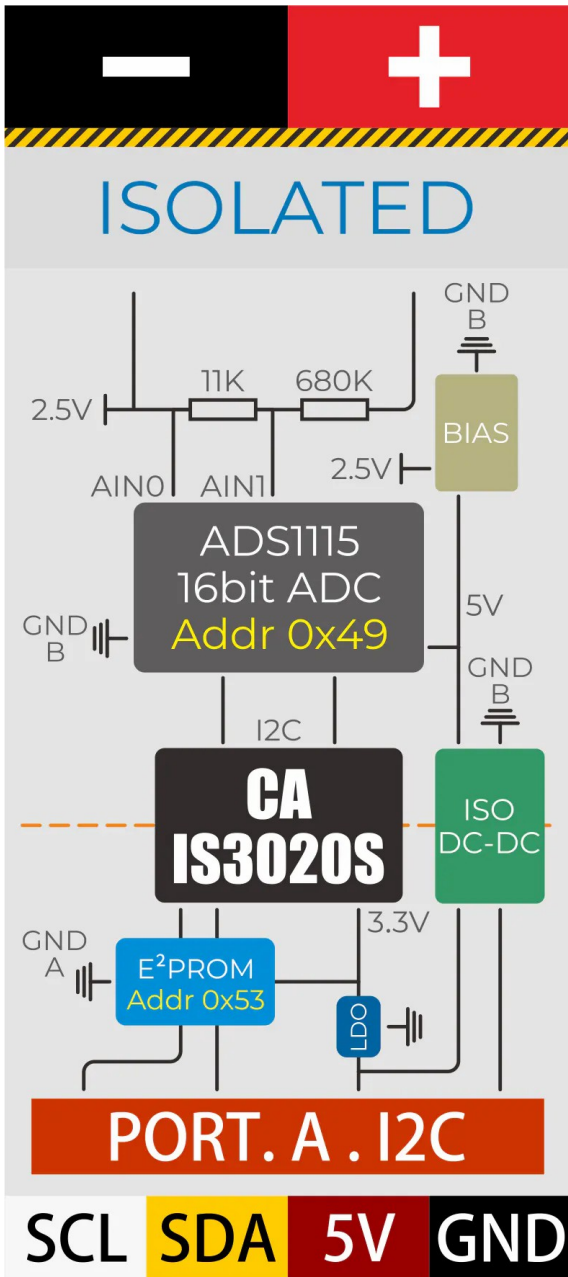
3, Burn Firmware

Windows MacOS

| Related Link

- [Datasheet](#)
- [CA-IS3020S](#)
- [ADS1115](#)

| Schematic



PinMap

M5Core(GROVE A)	SDA(GPIO21)	SCL(GPIO22)	5V	GND
V Meter Unit	SDA	SCL	5V	GND

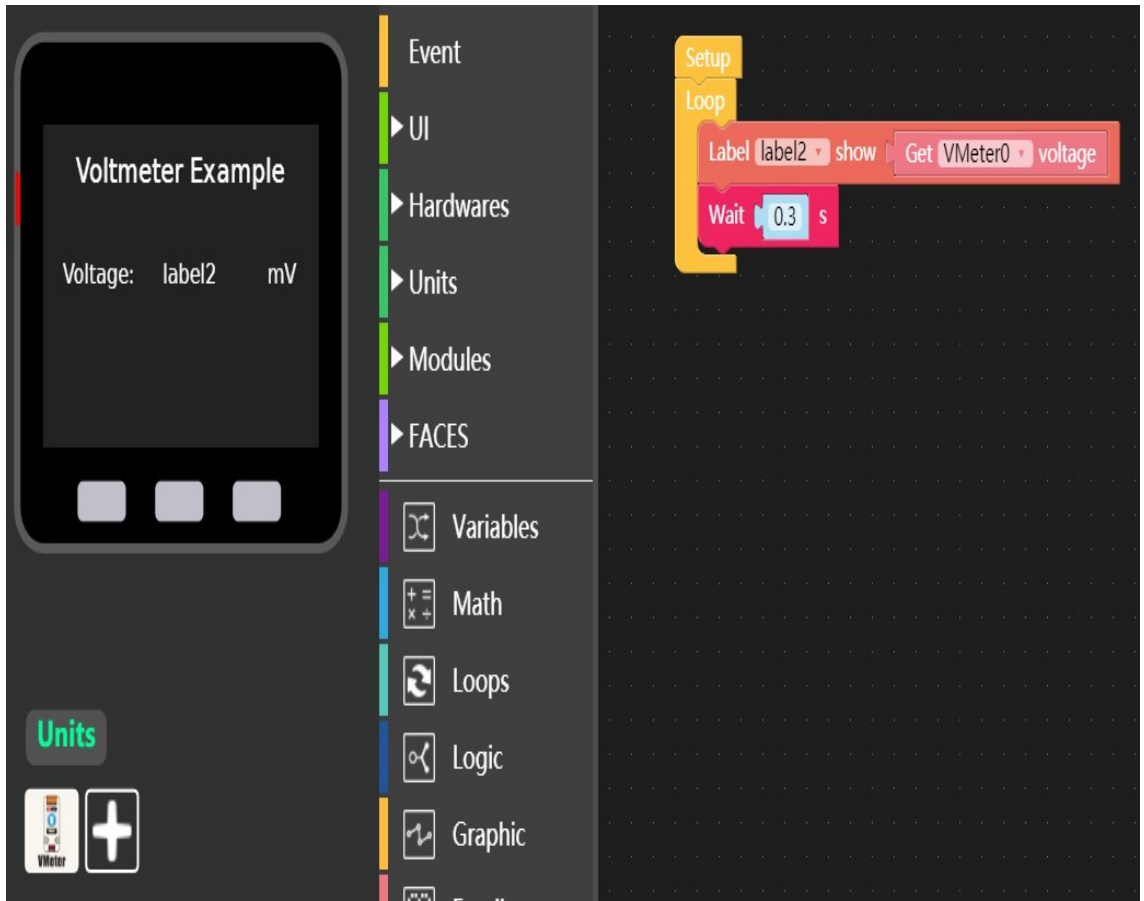
| Example

1. Arduino

- [Click here to download the Arduino example](#)

2. UIFlow

- [Click here to download the UIFlow example](#)



Last updated: 2020-12-14