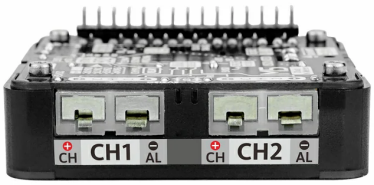
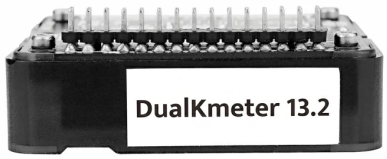
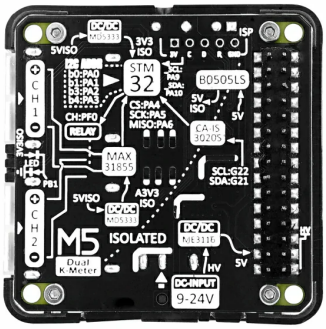
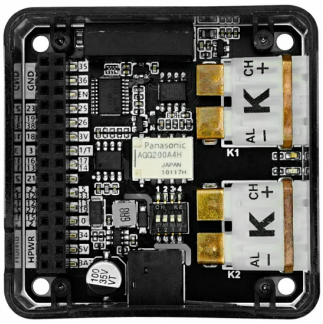
Module13.2 Dual Kmeter

SKU:M127









Description

Module13.2 Dual Kmeter is a dual-channel K-type temperature measurement module based on the **"MAX31855KASA + stm32f030f4p6 + electrical isolation"** solution. The module features **two K-type thermocouple sensor interfaces**, and uses a **signal relay to alternately measure the temperature values of the two channels**. It supports a measurement range of **-200°C to 1350°C** with an accuracy of ±2°C. Additionally, the module includes **B0505LS-1WR2 and CA-IS3020S** voltage and signal isolation chips, ensuring **system stability and safety**. The module also has a built-in **DIP switch** for easily switching different I2C addresses to meet various application needs. It can be used in **industrial automation, instrument detection**, and other scenarios.

Features

- STM32F030F4P6, Cortex-M0 core 32-bit microcontroller
- MAX31855KASA+T: (14-bit ADC, 0.25°C resolution, accuracy ±2%)
- Supported probe type: K-type - supports probe measurement range of -200°C to 1350°C
- Electrical isolation
- Dual-channel K-type thermocouple
- DIP switch for I2C address switching (default 0x11)
- Programming platforms: Arduino, UIFlow

Includes

- 1 × Module13.2 Dual Kmeter
- 2 × K-type thermocouples

Applications

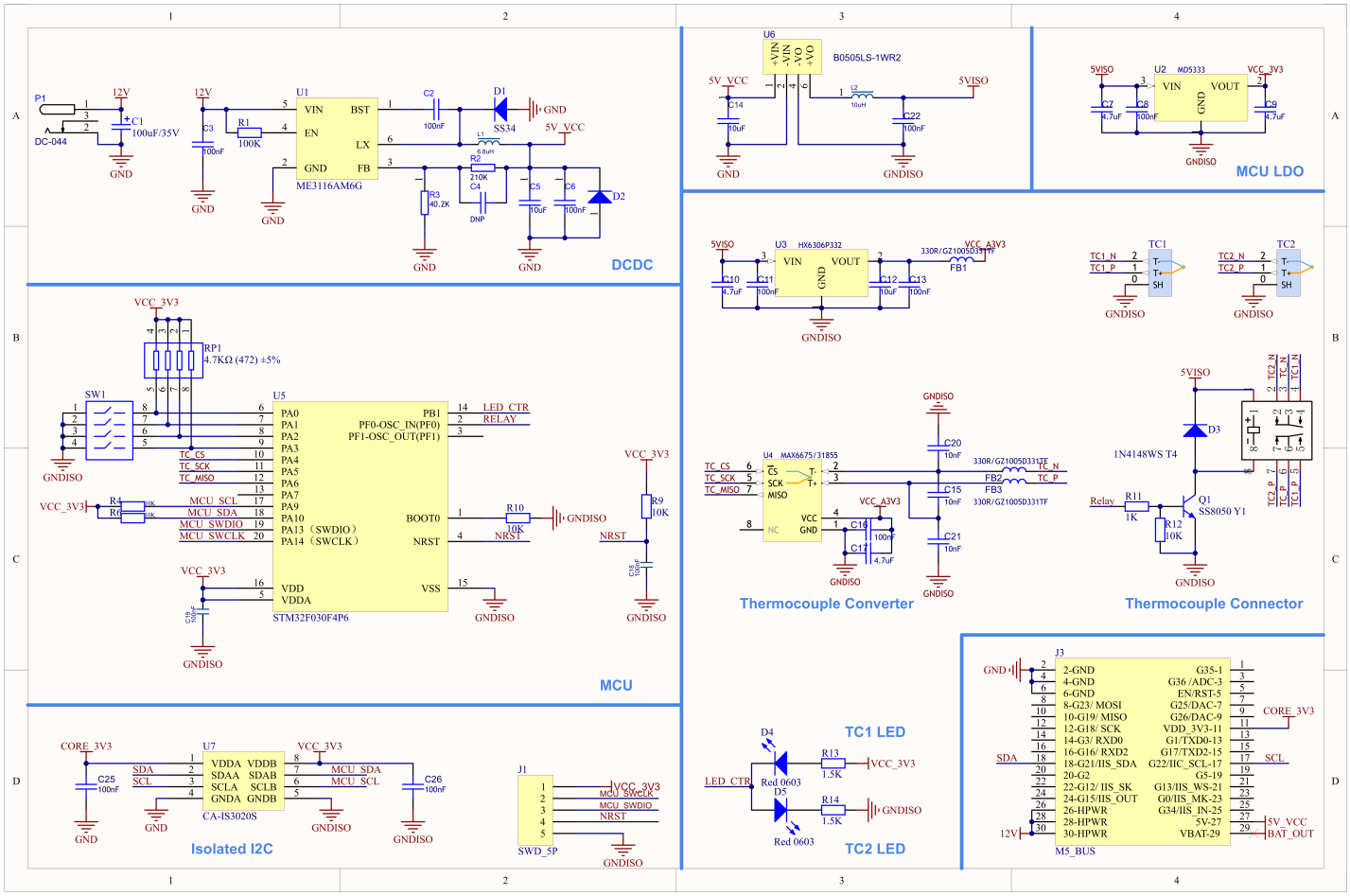
- Industrial automation
- Instrument detection

Specifications

Specification	Parameter
MCU	STM32F030F4P6@Cortex-M0 core, 32-bit microcontroller
Flash	64KB
SRAM	8KB
Interface	I2C @0x11 ~ 0x20
DC-DC	ME3116
LDO	HX6306P332, MD5333
Digital Temperature Sensor	MAX31855KASA+T
Relay	AGQ200A4H
Electrical Isolation	B0505LS-1WR2, CA-IS3020S
Measuring Temperature	-270°C ~ +1800°C
Module Operating Temperature	0 ~ 40°C
Thermocouple Type	K Type
Product Size	54.0 x 54.0 x 13.2mm
Product Weight	37.2g
Package Size	95.0 x 65.0 x 25.0mm
Gross Weight	65.6g

Schematics

- Module13.2 Dual Kmeter Schematics PDF



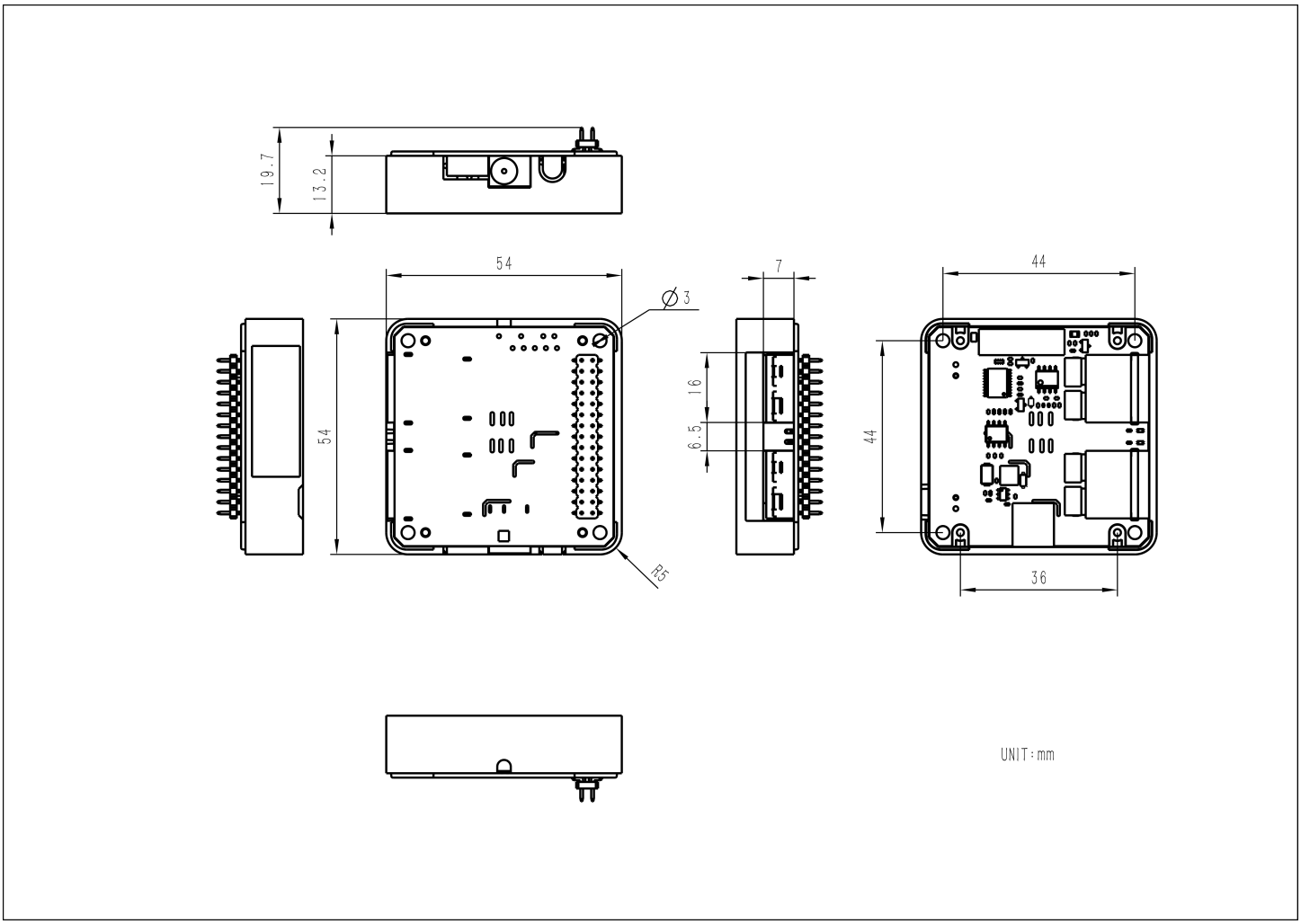
PinMap

M5-Bus

PIN	LEFT	RIGHT	PIN
GND	1	2	
GND	3	4	
GND	5	6	
	7	8	
	9	10	
	11	12	3V3
	13	14	
	15	16	
SDA	17	18	SCL
	19	20	
	21	22	
	23	24	
HPWR	25	26	
HPWR	27	28	5V
HPWR	29	30	BAT

Model Size

- Module13.2 Dual Kmeter Model Size PDF



Datasheets

- STM32F030F4P6
- B0505LS-1WR2
- CA-IS3020S
- HX6306P332
- MAX31855KASA
- MD5333
- ME3116AM6G

Softwares

Arduino

- Module13.2 Dual Kmeter Arduino Library

UiFlow1

- Module13.2 Dual Kmeter UiFlow1 Docs

UiFlow2

- Module13.2 Dual Kmeter UiFlow2 Docs

Internal Firmware

- Module13.2 Dual Kmeter Internal Firmware

Protocol

- Module13.2 Dual Kmeter I2C Protocol

M5Stack Module DualKmeter I2C Protocol																	V1 (FW Version) 2022/11/11
REG MAP (Addr:0x11)		**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**A**	**B**	**C**	**D**	**E**	**F**	**note**
Temperature	**0x00 R**	K-Temp-Celsius-byte0	K-Temp-Celsius-byte1	K-Temp-Celsius-byte2	K-Temp-Celsius-byte3	K-Temp-Fahrenheit-byte0	K-Temp-Fahrenheit-byte1	K-Temp-Fahrenheit-byte2	K-Temp-Fahrenheit-byte3									**Temperature:** Setting value / 100[1]
Internal Temperature	**0x10 R**	Inter-Temp-Celsius-byte0	Inter-Temp-Celsius-byte1	Inter-Temp-Celsius-byte2	Inter-Temp-Celsius-byte3	Inter-Temp-Celsius-byte0	Inter-Temp-Celsius-byte1	Inter-Temp-Celsius-byte2	Inter-Temp-Celsius-byte3									**Internal Temperature:** Setting value / 100[1]
KMeter select	**0x20 R/W**	KMeter select																**KMeter select:** 0, KMeter1; 1, Kmeter2
Ready	**0x30 R**	Ready																**Ready:** 0, Ready; other, not ready
Celsius Temperature String	**0x40 R**	Sign-string	Thousands place-string	Hundreds place-string	Tens place-string	Ones place-string	'.'	First decimal-string	Second decimal-string									
Fahrenheit Temperature String	**0x50 R**	Sign-string	Thousands place-string	Hundreds place-string	Tens place-string	Ones place-string	'.'	First decimal-string	Second decimal-string									
Celsius Internal Temperature String	**0x60 R**	Sign-string	Thousands place-string	Hundreds place-string	Tens place-string	Ones place-string	'.'	First decimal-string	Second decimal-string									
Fahrenheit Internal Temperature String	**0x70 R**	Sign-string	Thousands place-string	Hundreds place-string	Tens place-string	Ones place-string	'.'	First decimal-string	Second decimal-string									
Firmware Version	**0xF0 R**															version		**Version:** firmware version number

I2C ADDR SW	**0**	**1**	**2**	**3**
0x11	OFF	OFF	OFF	OFF
0x12	ON	OFF	OFF	OFF
0x13	OFF	ON	OFF	OFF
0x14	ON	ON	OFF	OFF
0x15	OFF	OFF	ON	OFF
0x16	ON	OFF	ON	OFF
0x17	OFF	ON	ON	OFF
0x18	ON	ON	ON	OFF
0x19	OFF	OFF	OFF	ON
0x1A	ON	OFF	OFF	ON
0x1B	OFF	ON	OFF	ON
0x1C	ON	ON	OFF	ON
0x1D	OFF	OFF	ON	ON
0x1E	ON	OFF	ON	ON
0x1F	OFF	ON	ON	ON
0x20	ON	ON	ON	ON

video