M5STACK

KMeterISO Unit

SKU: U133-V11

x

Description

KMeterISO unitis an integrated K-type thermocouple sensor unit that integrates the functions of "acquisition + isolation + communication",
using **STM32F030+MAX31855KASA** 14bit thermocouple digital conversion chip scheme to achieve high-precision temperature acquisition and conversion, MCU using STM32F030 to realize data acquisition and I2C communication interface, using **CA-IS3641HW** as a signal isolator. The unit supports access to thermocouple probes with a measurement range of **-200°C to 1350°C**, and adopts a universal standard K-type flat interface, which is convenient for subsequent replacement of different measuring probes to match different needs. This module is widely used in **application scenarios such as temperature collection, control, and monitoring in industrial automation, instrumentation, power and electrical, heat treatment and other fields**.

Features

- STM32F030, high-performance ARM Cortex-M0 core, supports I2C firmware updates
- MAX31855KASA+T: (14Bit ADC, 0.25°C Resolution, ±2% Accuracy)
- Supported probe types: Type K - Supports access probe measuring range from -200°C to 1350°C
- I2C communication interface addr: 0x66
- Signal Isulate The CA-IS3641HW isolates input and output signals to improve stability, safety, and reliability.
- Supported programming platforms: Arduino, UIFlow

Includes

- 1x KmeterISO Unit
- 1x K-type thermocouple probe (measuring range -50°C to 250°C, wire length 1m)
- 1x HY2.0-4P cable (20cm)

Applications

- Industrial automation
- Instrumentation
- Power appliances
- heat treatment

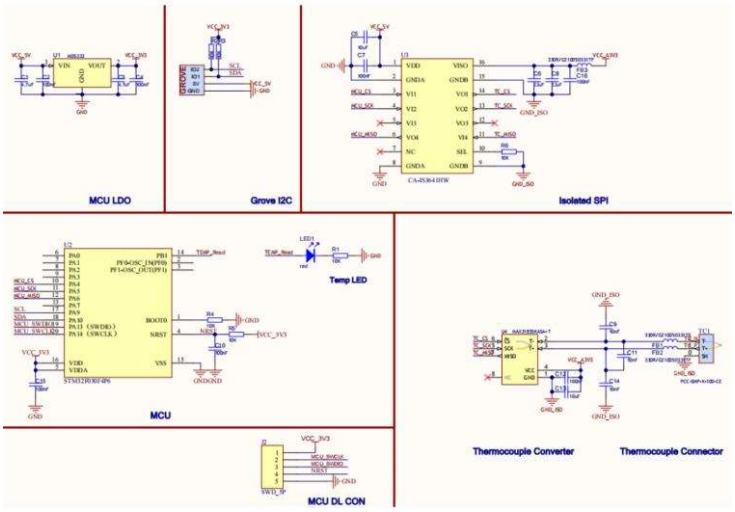
Specification

Resources	Parameters
MCU	STM32F030, ARM Cortex-M0，最高48MHz，64K flash，4K SRAM
Temperature sensor chip	MAX31855KASA+T
Signal isolation chip	CA-IS3641HW
resolution	14 bit
Thermocouple Operating temperature range	-200-1350°C
Thermocouple type	K
Maximum sample rate	10 Hz
SPI interface clock frequency range	Up to 5 MHz
Internal temperature sensor accuracy	±2°C
measurement accuracy	±2°C
Anomaly detection	Open, short, and thermocouple low voltages
STM32F030	ARM Cortex-M0，48MHz，64K flash，8K SRAM
i2c address	0x66
Product Size	56 * 24 * 9.6 mm
Package Size	136mm × 92mm × 13mm
Product Weight	10.1g
Package Weight	22 g

Related Link

- STM32F030F4P6 Datasheet
- MAX31855KASA+
- CA-IS3641HW
- tutorial video

Schematic



Module Size