



M5STACK

ExtEncoder Unit

SKU: U161



Description

ExtEncoder unit is an acquisition unit for external rotary encoder, supporting AB/ABZ signal input, using STM32F030 main control integrated encoder signal acquisition and decoding firmware, users can directly obtain the encoded value through the I2C reading operation, suitable for example, robot arm position control, automatic cutting in the field of industrial automation, meter wheel, etc.

Features

- Supports signal acquisition with external rotary encoders
- Support AB/ABZ signal input
- Built-in STM32F030 main control, integrated encoder signal acquisition and decoding firmware
- The encoded value can be obtained directly through the I2C read operation

Includes

- 1x ExtEncoder Unit
- 1x Grove Cable(20cm)
- 1 × VH2.54-5P

Applications

- Meter counting applications
- encoder
- Automated cutting

Specification

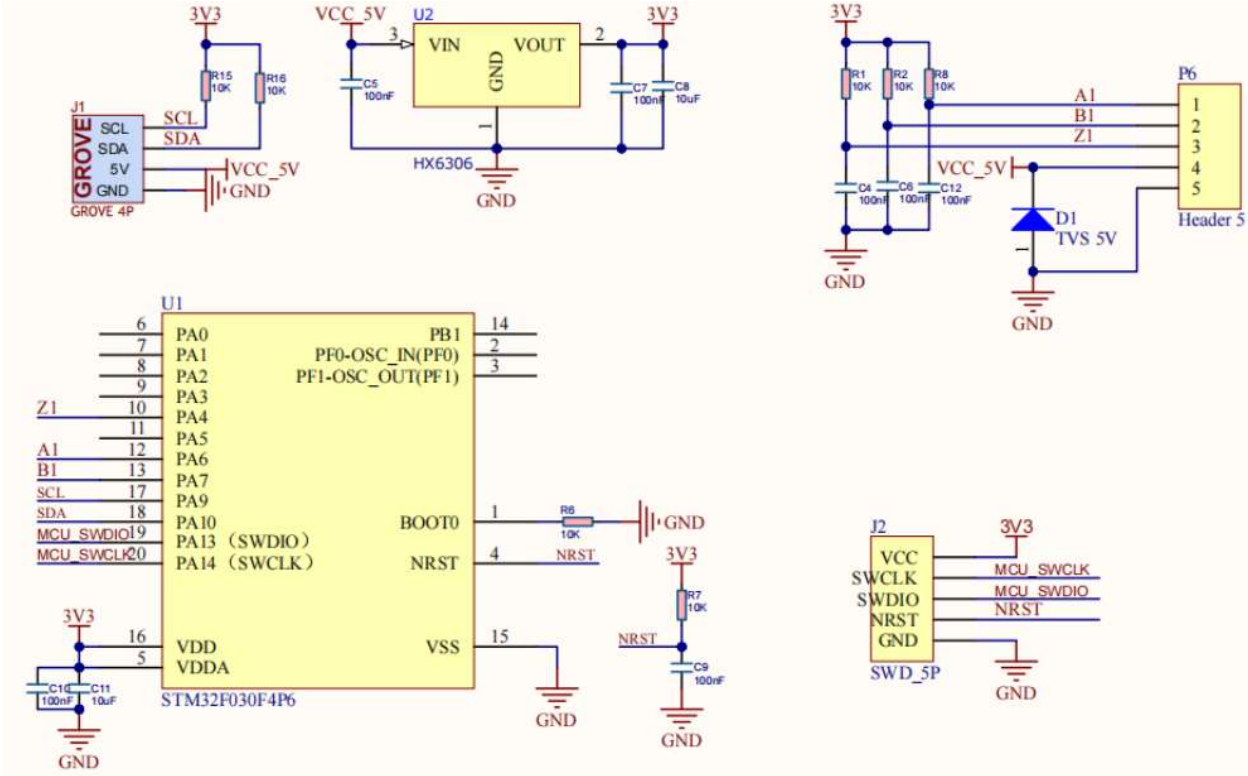
Resources	Parameters
Sampling accuracy	12 bit
Signal input type	AB/ABZ
I2C Address	0x59
Product Size	40*24*14mm
Package Size	67*53*12mm
Product Weight	8g
Package Weight	21g



Related Link

- [STM32F030F4P6 Datasheet](#)

Schematic



Arduino

- [ExtEncoder Arduino Example](#)
- [ExtEncoder Arduino firmware](#)

M5Stack Unit ExtEncoder I2C Protocol														V2 (FW Version)				
REG MAP (Addr:0x59)														2023/5/10				
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	note
Setting	Perimeter (mm)	0x40 R/W	Perimeter-Byte0	Perimeter-Byte1	Perimeter-Byte2	Perimeter-Byte3											Perimeter: Perimeter = (Perimeter-byte0 + Perimeter-byte1 * 256 + Perimeter-byte2 * 65536 + Perimeter-byte3 * 16777216)	
	Pulse per round	0x50 R/W	Pulse-Byte0	Pulse-Byte1	Pulse-Byte2	Pulse-Byte3											Pulse per round: Pulse per round = (Pulse-byte0 + Pulse-byte1 * 256 + Pulse-byte2 * 65536 + Pulse-byte3 * 16777216)	
	Z Trigger Mode	0x70 W/R	Z Trigger Mode											0; Endless; 1; Z Rising edge, encoder = 0; 2; Z Falling edge, encoder = 0;				
	Reset	0x30 W	Reset											Write 1 to reset encoder and meter value				
Reading	Encoder Value	0x00 R	Encoder Value-Byte0	Encoder Value-Byte1	Encoder Value-Byte2	Encoder Value-Byte3											Encoder Value: Encoder Value = (Encoder Value-byte0 + Encoder Value-byte1 * 256 + Encoder Value-byte2 * 65536 + Encoder Value-byte3 * 16777216)	
	Meter Value (mm)	0x10 R	Encoder Value-Byte0	Encoder Value-Byte1	Encoder Value-Byte2	Encoder Value-Byte3											Meter Value: Meter Value = (Meter Value-byte0 + Meter Value-byte1 * 256 + Meter Value-byte2 * 65536 + Meter Value-byte3 * 16777216)	
	Meter Value String (m)	0x20 R	sign	thousand's digit	hundred's digit	ten's digit	unit's digit	..	tenths	hundredths	thousandths							
	Turns (Z Counter)	0x60 R/W	Turns-Byte0	Turns-Byte1	Turns-Byte2	Turns-Byte3											Turns(Z Counter): Turns = (Turns-byte0 + Turns-byte1 * 256 + Turns-byte2 * 65536 + Turns-byte3 * 16777216)	
System	Firmware Version	0xF0 R													Version	Version: firmware version number		
	I2C Address	0xF0 R													Address	Address: I2C Address		

<https://docs.m5stack.com/en/unit/ExtEncoder%20Unit> 6-22-23