Unit 8Encoder

SKU:U153







Description

Unit 8Encoder is an input unit that integrates 8 rotary encoders, using an STM32 microcontroller for data collection and communication processing, and communicates with the host via the I2C interface. Each rotary encoder corresponds to one RGB LED light. The encoder can rotate left and right and can also be pressed radially. Additionally, there is a physical toggle switch and its corresponding RGB LED light, and it contains a 5V->3V3 DC-DC circuit. This unit can be used for multi-channel relative control value input, with the corresponding RGB lights displaying different statuses. The toggle switch can be used for multi-channel switch input, suitable for applications such as multi-degree-of-freedom robots or music equalization.

Features

- 8-channel rotary encoder
- 8 adjustable RGB lights
- I2C communication
- Toggle switch for multi-channel switch input
- Radial press function
- HY2.0-4P interface
- 2 x LEGO compatible holes

Includes

- 1 x Unit 8Encoder
- 1 x HY2.0-4P Grove connection cable (20cm)

Applications

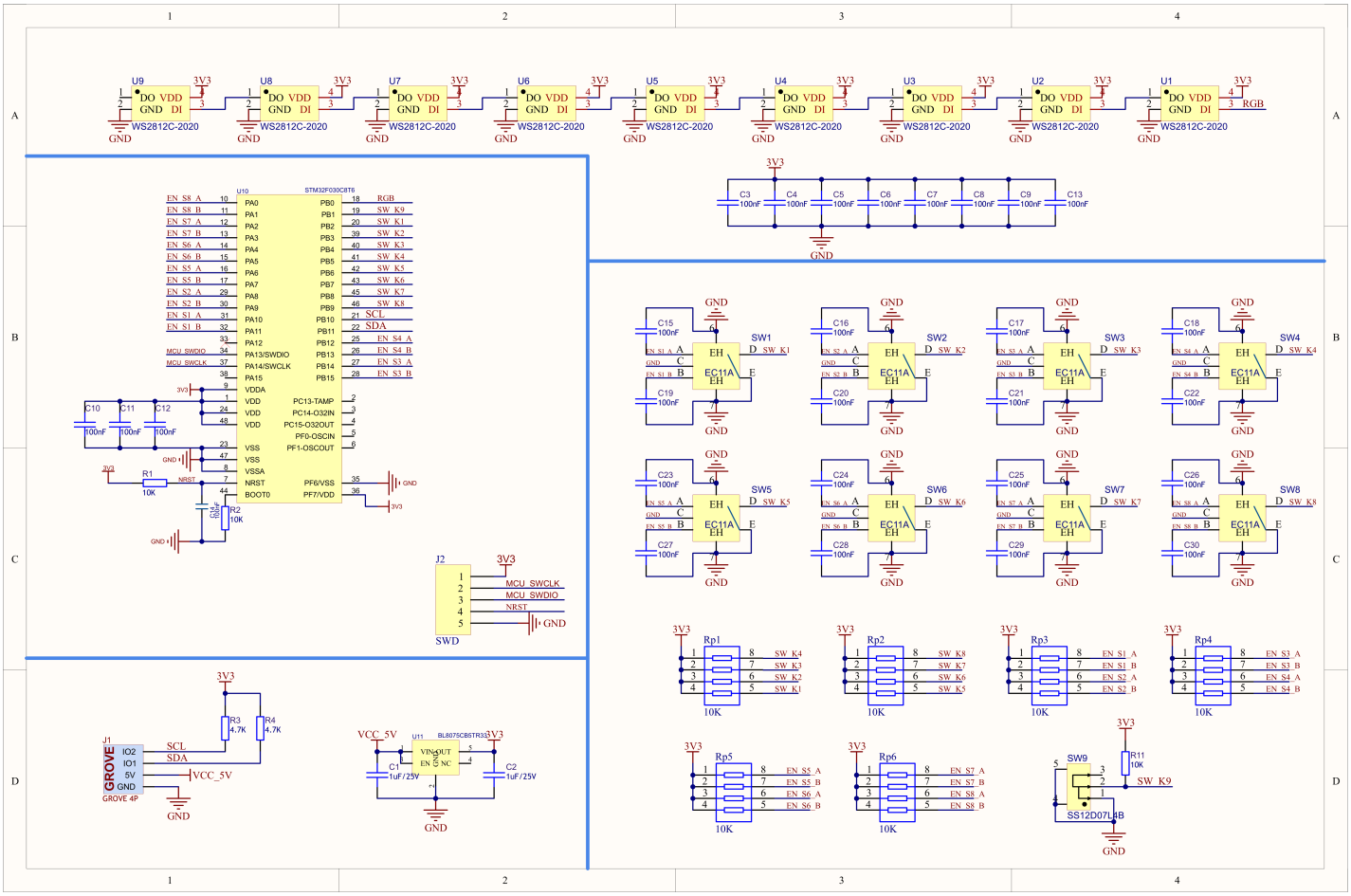
- Multi-degree-of-freedom robot joint control
- Music equalization control
- Multi-channel lighting control

Specifications

Specification	Parameter
MCU	STM32F030C8T6
RGB	WS2812C-2020
Input Voltage	5v
Communication Interface	I2C Communication @0x41
Press Life	>50000 times
Product Size	128.0 x 24.0 x 25.0mm
Product Weight	43.9g
Package Size	131.0 x 27.0 x 27.0mm
Gross Weight	52.7g

Schematics

- Unit 8Encoder Schematics PDF

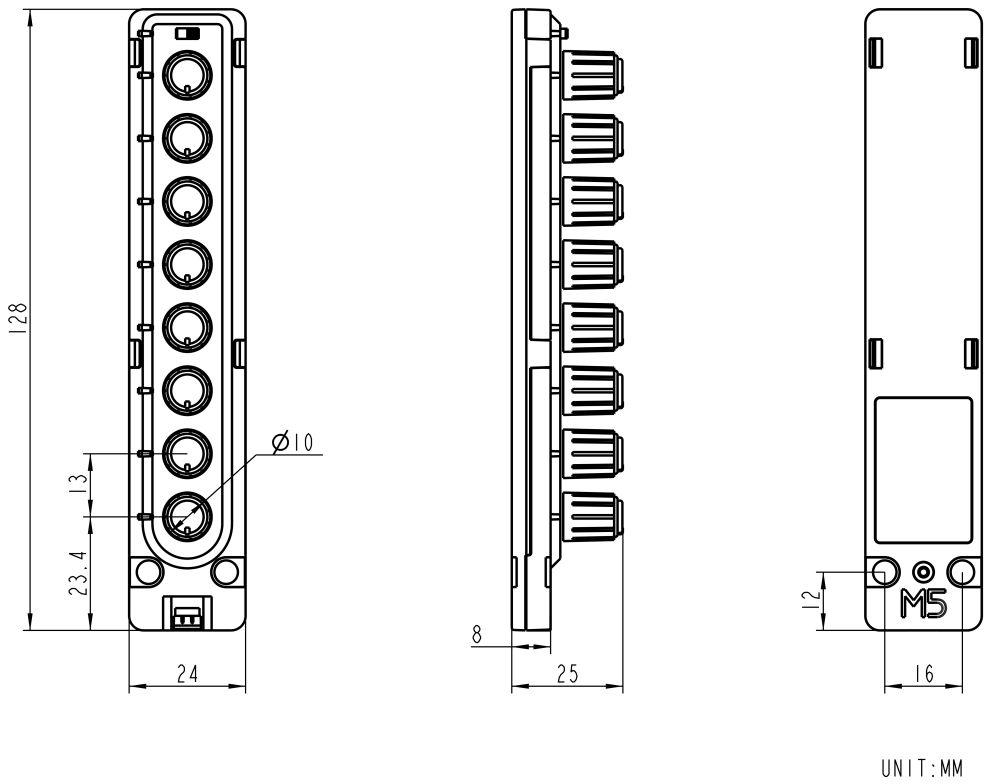


PinMap

Unit 8Encoder

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

Model Size



Datasheets

- STM32F030C8T6

Softwares

Arduino

- Unit 8Encoder Arduino Library

UiFlow1

- Unit 8Encoder UiFlow1 Docs

UiFlow2

- Unit 8Encoder UiFlow2 Docs

Internal Firmware

- Unit 8Encoder Internal Firmware

Protocol

M5Stack Unit 8Encoder I2C Protocol																	V1 (FW Version) 2022/11/8
REG MAP (Addr:0x41)		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	note
Counter Value	0x00 R/W	Cnt0-byte0	Cnt0-byte1	Cnt0-byte2	Cnt0-byte3	Cnt1-byte0	Cnt1-byte1	Cnt1-byte2	Cnt1-byte3	Cnt2-byte0	Cnt2-byte1	Cnt2-byte2	Cnt2-byte3	Cnt3-byte0	Cnt3-byte1	Cnt3-byte2	Cnt3-byte3	**Cnt**: -2147483648-2147483647 (will be reset after set reg 0x40)
	0x10 R/W	Cnt4-byte0	Cnt4-byte1	Cnt4-byte2	Cnt4-byte3	Cnt5-byte0	Cnt5-byte1	Cnt5-byte2	Cnt5-byte3	Cnt6-byte0	Cnt6-byte1	Cnt6-byte2	Cnt6-byte3	Cnt7-byte0	Cnt7-byte1	Cnt7-byte2	Cnt7-byte3	
Increment Value	0x20 R	Inc0-byte0	Inc0-byte1	Inc0-byte2	Inc0-byte3	Inc1-byte0	Inc1-byte1	Inc1-byte2	Inc1-byte3	Inc2-byte0	Inc2-byte1	Inc2-byte2	Inc2-byte3	Inc3-byte0	Inc3-byte1	Inc3-byte2	Inc3-byte3	**Inc**: -2147483648-2147483647 (will be reset after get)
	0x30 R	Inc4-byte0	Inc4-byte1	Inc4-byte2	Inc4-byte3	Inc5-byte0	Inc5-byte1	Inc5-byte2	Inc5-byte3	Inc6-byte0	Inc6-byte1	Inc6-byte2	Inc6-byte3	Inc7-byte0	Inc7-byte1	Inc7-byte2	Inc7-byte3	
Counter Reset	0x40 W	Cnt0-RST	Cnt1-RST	Cnt2-RST	Cnt3-RST	Cnt4-RST	Cnt5-RST	Cnt6-RST	Cnt7-RST									**RST**: write 1 to reset counter
Button Value	0x50 R	BNT0	BNT1	BNT2	BNT3	BNT4	BNT5	BNT6	BNT7									**BNT**: 0~1
Switch	0x60 R	SW value																**SW Value**: 0~1
RGB	0x70 R/W	LED0-R	LED0-G	LED0-B	LED1-R	LED1-G	LED1-B	LED2-R	LED2-G	LED2-B	LED3-R	LED3-G	LED3-B	LED4-R	LED4-G	LED4-B	LED5-R	**R/G/B**: 0~255
	0x80 R/W	LED5-G	LED5-B	LED6-R	LED6-G	LED6-B	LED7-R	LED7-G	LED7-B	LED8-R	LED8-G	LED8-B						
Firmware Version	0xF0 R															Version		**Version**: firmware version number
I2C Address	0xF0 R/W																Address	**Address**: 1~127

Video