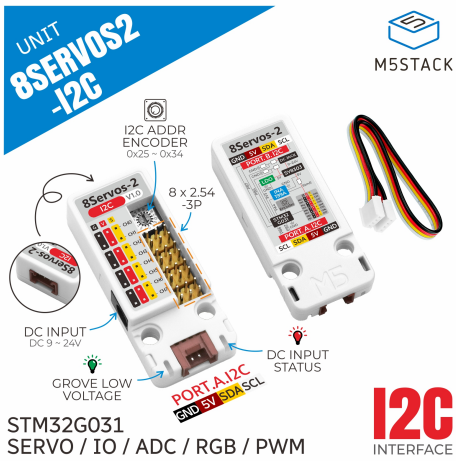
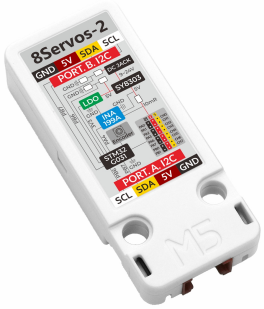
Unit 8Servos2-I2C

SKU:U222

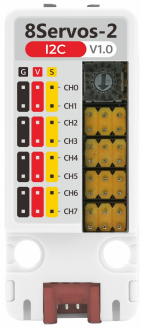


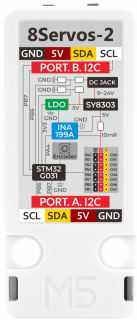






















Description

Unit 8Servos2-I2C is an 8-channel servo cascade control unit featuring the **STM32G031G8U6** as its core controller. It adopts an I2C communication interface and provides 8x configurable IO channels that support configuring multiple operating modes: servo control, digital input / output, ADC input, RGB LED control, and PWM mode.

Two onboard HY2.0-4P interfaces are connected internally and share the same I2C bus, and a 16-position rotary encoder switch is provided for flexible configuration of the device I2C address, making it convenient to expand and connect other I2C devices. This unit supports DC 9 ~ 24V input and integrates an SY8303AIC step-down circuit to provide a 5V supply, with a maximum total output current of 3A. An onboard INA199A1DCKR current detection circuit can sample the total servo current, and input voltage and 5V supply voltage sampling circuits as well as power status indicators are also provided, making it suitable for application scenarios such as multi-servo control, robot joint drive, and smart toys.

Features

- STM32G031G8U6 core controller
- 8x configurable IO channels supporting multiple operating modes:
  - Servo control
  - Digital input / output
  - ADC input
  - RGB LED control
  - PWM mode
- Communication interface and address configuration
  - I2C communication interface
  - 2x HY2.0-4P interfaces for multi-I2C device expansion
  - 16-position rotary encoder switch for I2C address configuration
- Power and detection
  - DC 9 ~ 24V power input, with an integrated 5V@3A step-down circuit (peripheral drive + HY2.0-4P output to power the controller)
  - Integrated total servo current monitoring
  - DC input voltage detection
  - 5V supply voltage detection
- Status indication
  - Red indicator: DC power interface status indicator (lights up when the interface voltage is higher than 8.5V)
  - Green indicator: HY2.0-4P interface undervoltage status indicator (lights up when the interface voltage is lower than 4.5V)

Includes

- 1 x Unit 8Servos2-I2C
- 1 x HY2.0-4P Grove Cable (20cm)

Applications

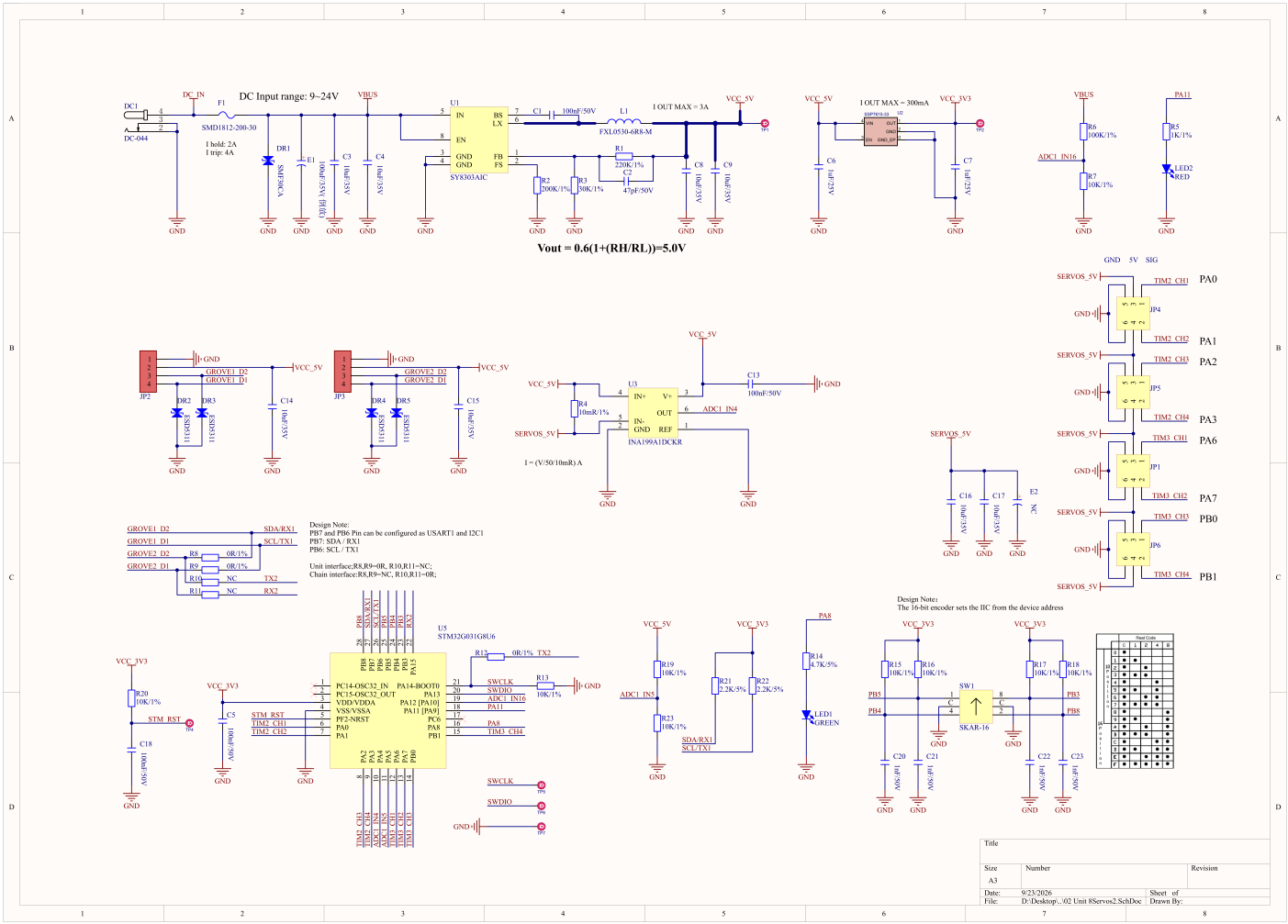
- Multi-servo control
- Robot joint drive
- Smart toys
- STEAM education

Specifications

Specification	Parameter
MCU	STM32G031G8U6
Configurable IO Channels	8, supports operating modes: servo control, digital input / output, ADC input, RGB LED, PWM mode
IO Channel Interface	8 x 2.54-3P
Communication Interface	I2C @ 0x25 ~ 0x34
DC Power Input Interface	Input voltage: DC 9 ~ 24V, spec: 5.5 x 2.1mm, polarity: center positive, outer negative
Step-Down Chip	SY8303AIC
Power Output	DC 5V, max 3A (shared by all onboard loads)
Current Detection Circuit	INA199A1DCKR, paired with a 10mΩ sampling resistor
Indicator	Red DC input monitoring indicator, green undervoltage monitoring indicator
Standby Power Consumption	DC 12V@4.56mA
Operating Power Consumption	DC 12V@1.6A (8 servo loads)
Product Size	56.0 x 24.0 x 11.5mm
Product Weight	11.6g
Package Size	138.0 x 93.0 x 13.0mm
Gross Weight	17.2g

Schematics

- Unit 8Servos2-I2C Schematic PDF



PinMap

HY2.0-4P

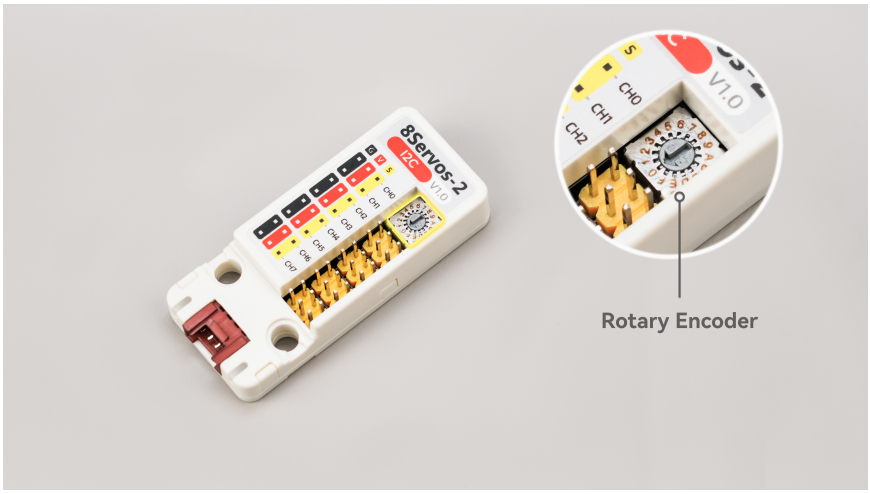
HY2.0-4P	Black	Red	Yellow	White
IN & OUT	GND	5V	SDA	SCL

Input/Output Interface Description

The input and output interfaces of the Unit 8Servos2-I2C are connected internally and can be used to cascade more Unit 8Servos2-I2C units or I2C devices.

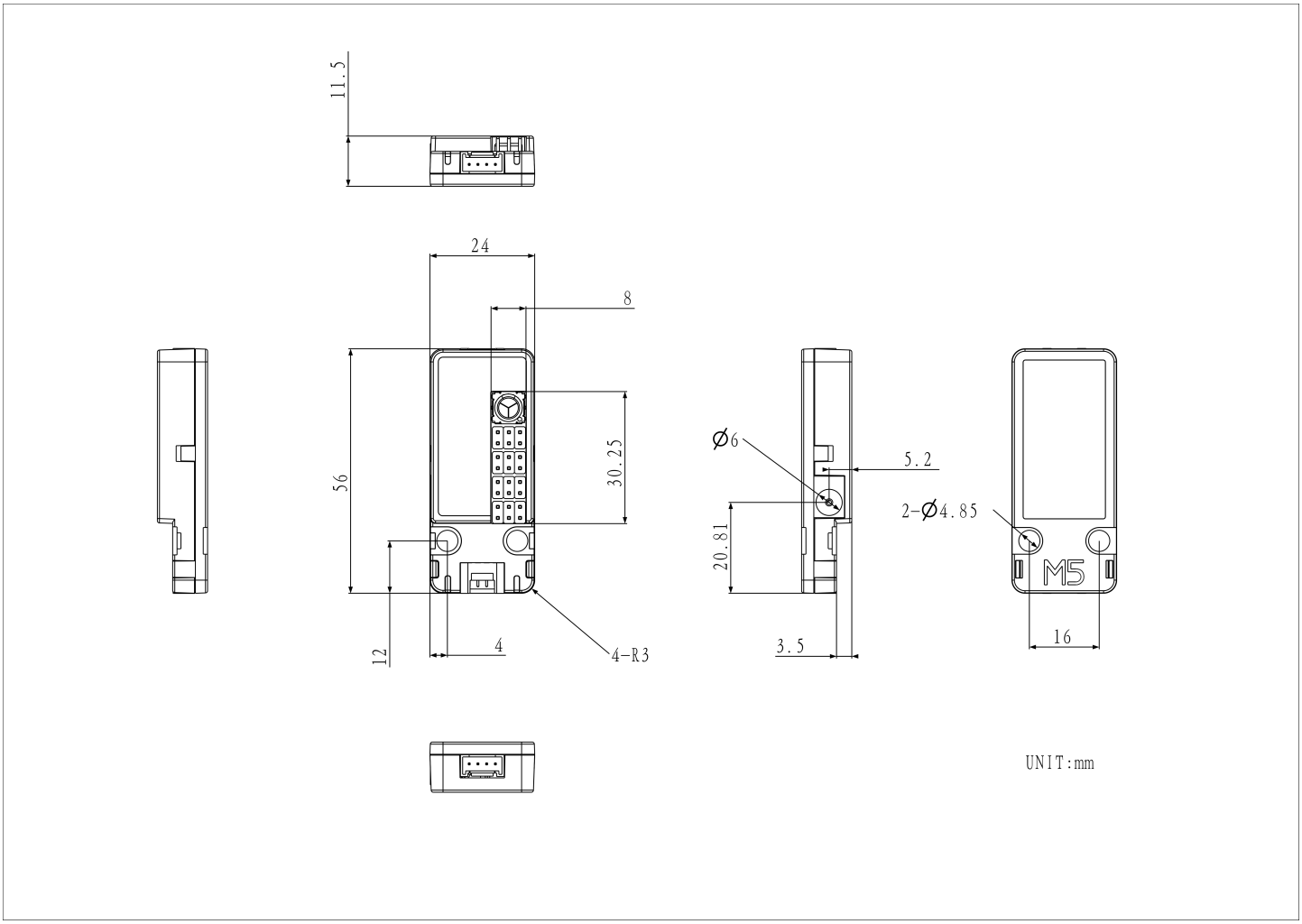
I2C Address Table

Rotary Encoder Switch	I2C Address
0	0x25
1	0x26
2	0x27
3	0x28
4	0x29
5	0x2A
6	0x2B
7	0x2C
8	0x2D
9	0x2E
A	0x2F
B	0x30
C	0x31
D	0x32
E	0x33
F	0x34



Model Size

- Unit 8Servos2-I2C Model Size PDF



Datasheets

- INA199A1DCKR Datasheet

Softwares

Arduino

- Unit 8Servos2-I2C Arduino Driver Library
- Unit 8Servos2-I2C Arduino Tutorial

Internal Firmware

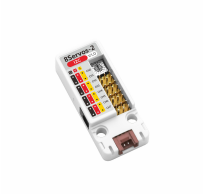
- Unit 8Servos2-I2C Internal Firmware

Protocol

View Protocol

Video

Product Comparison

Product Compare	 Unit 8Servos2-I2C	 Unit 8Servos2-Chain
Communication Interface	I2C	UART (Chain Protocol)
Node Expansion	I2C address: 0x25 ~ 0x34	Chain cascade
Channel Count	8	8
Operating Modes	Digital input/output / Servo / ADC / RGB / PWM	Digital input/output / Servo / ADC / RGB / PWM
Power Input	DC 9 ~ 24V	DC 9 ~ 24V
Servo Power Supply	DC 5V	DC 5V
Current Detection	INA199	INA199
Core Chip	STM32G031G8U6	STM32G031G8U6