DCSSR Unit 🛒
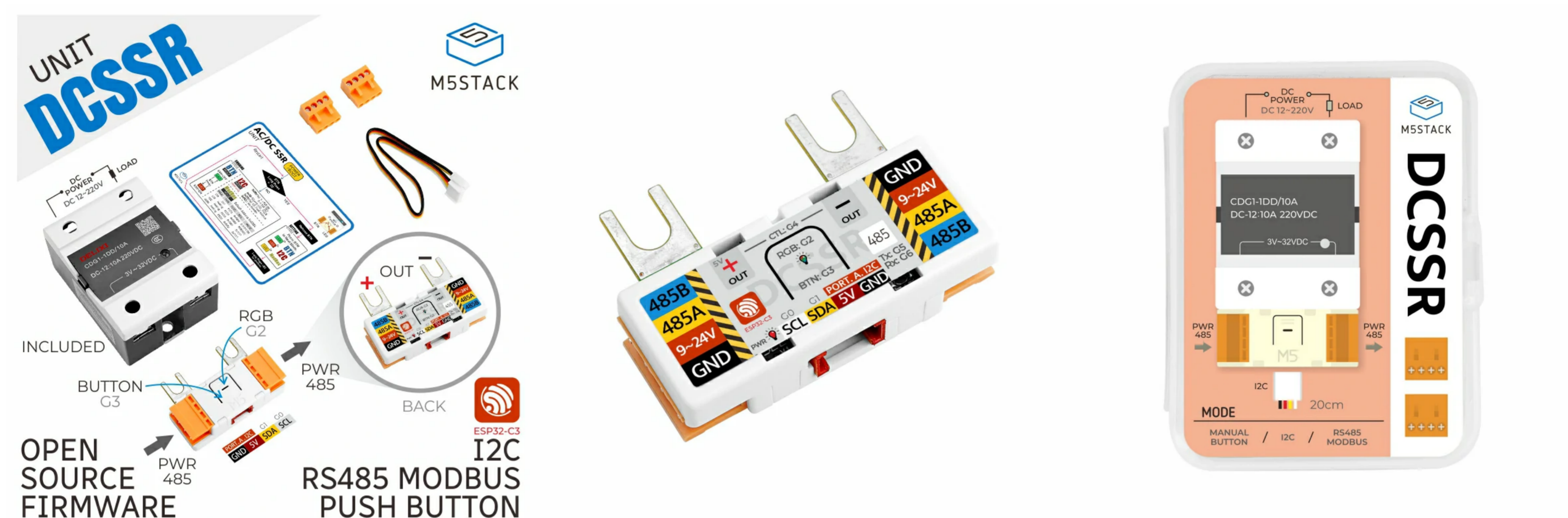
Description

Unit DCSSR is a `DC to DC` single phase solid state relay controller kit, comes with a single phase solid state relay + ESP32C3 controller board. Supports `key control`, `I2C slave`, and `Modbus networking` modes of operation. Integrated programmable full-color RGB LED for for state indication, clear to operate.This kit is contactless and adopts semiconductor switching elements. It has several advantages such as high switching speed, extremely long life, low switching noise, no switching spark and ultra-reliable than most mechanical relays. Widely used in digital program control devices, motor control devices, temperature control, data processing systems and computer peripheral interface devices. `It is specially designed for harsh environments with corrosion, humidity or explosion-proof requirements and frequent turn-on/off requirements`.

Features

- Single-phase solid state relay
- Three operating modes. - Push button control - I2C slave (support device I2C address configuration) - Modbus networking (supports device ID configuration)
- Programmable full color RGB LED
- RS485PWR interface (support input 9-24V to power the device)
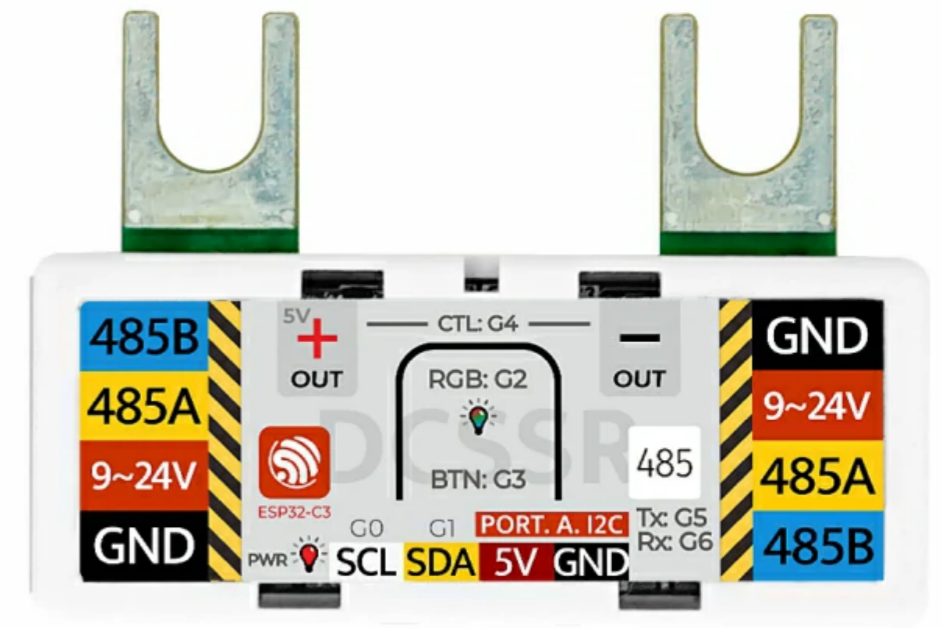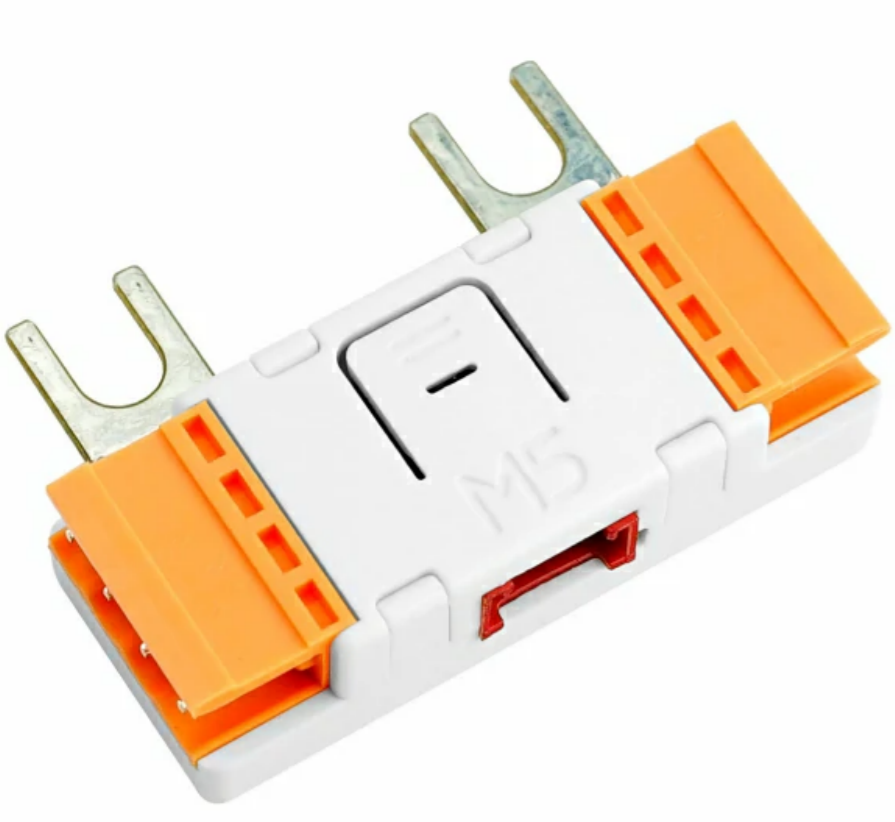
Includes

- 1x Single Phase Solid State Relay
- 1x UNIT DCSSR
- 1x HY2.0-4P Cable (20cm)
- 1x Communication protocol manual
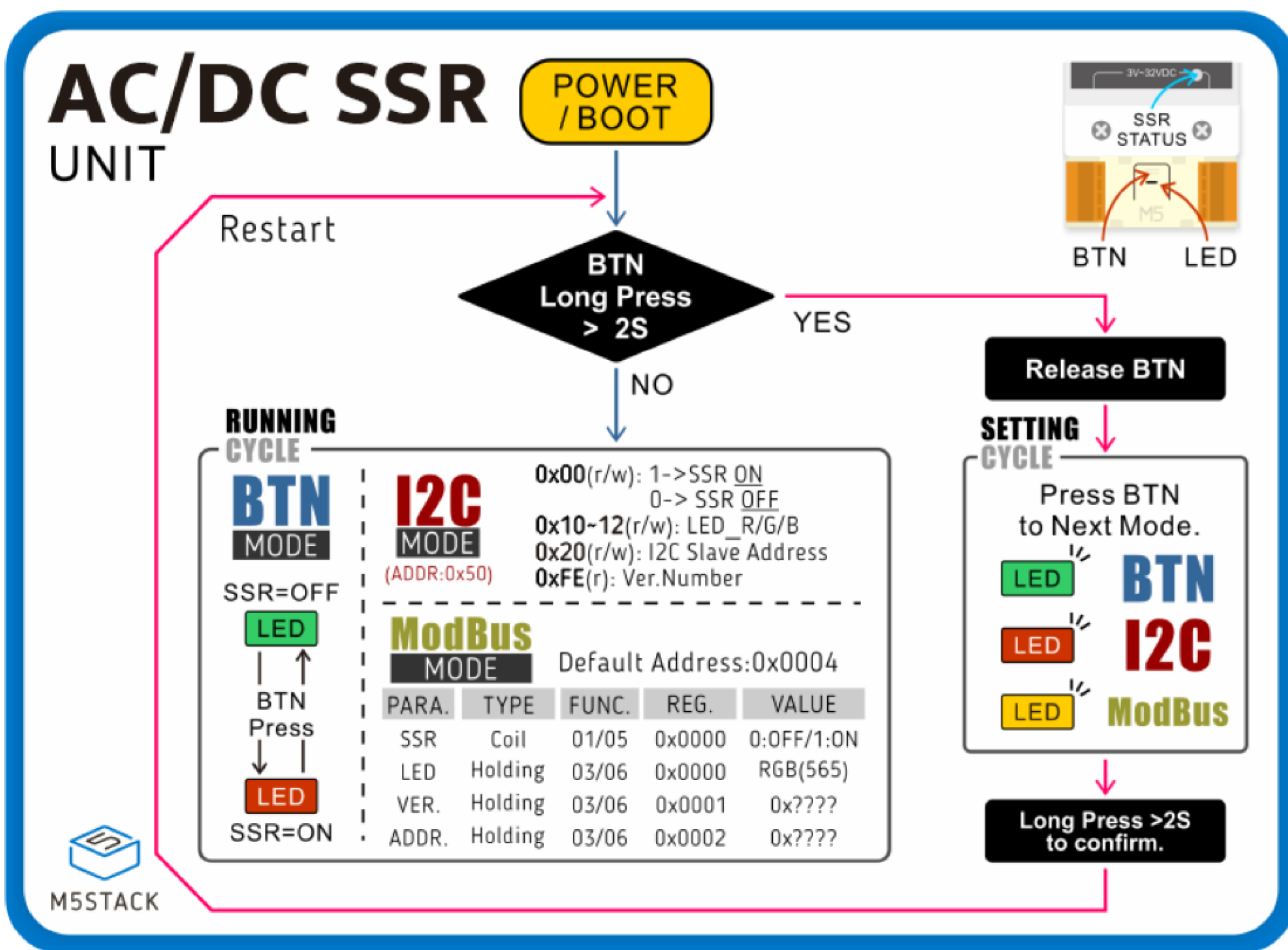- 2x 3.96-4P Terminal Block

Applications

- DC line interrupting
- Motor equipment control
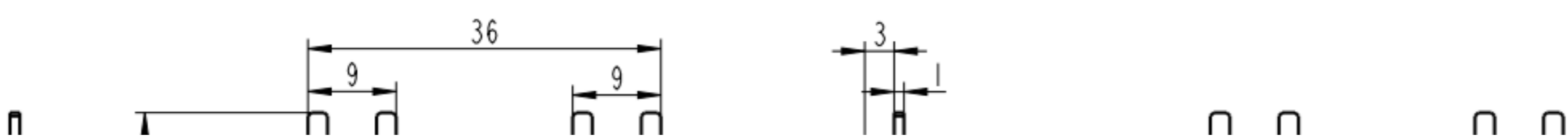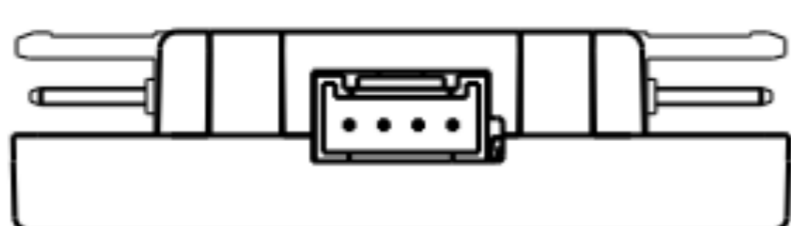- Temperature control devices

Specification

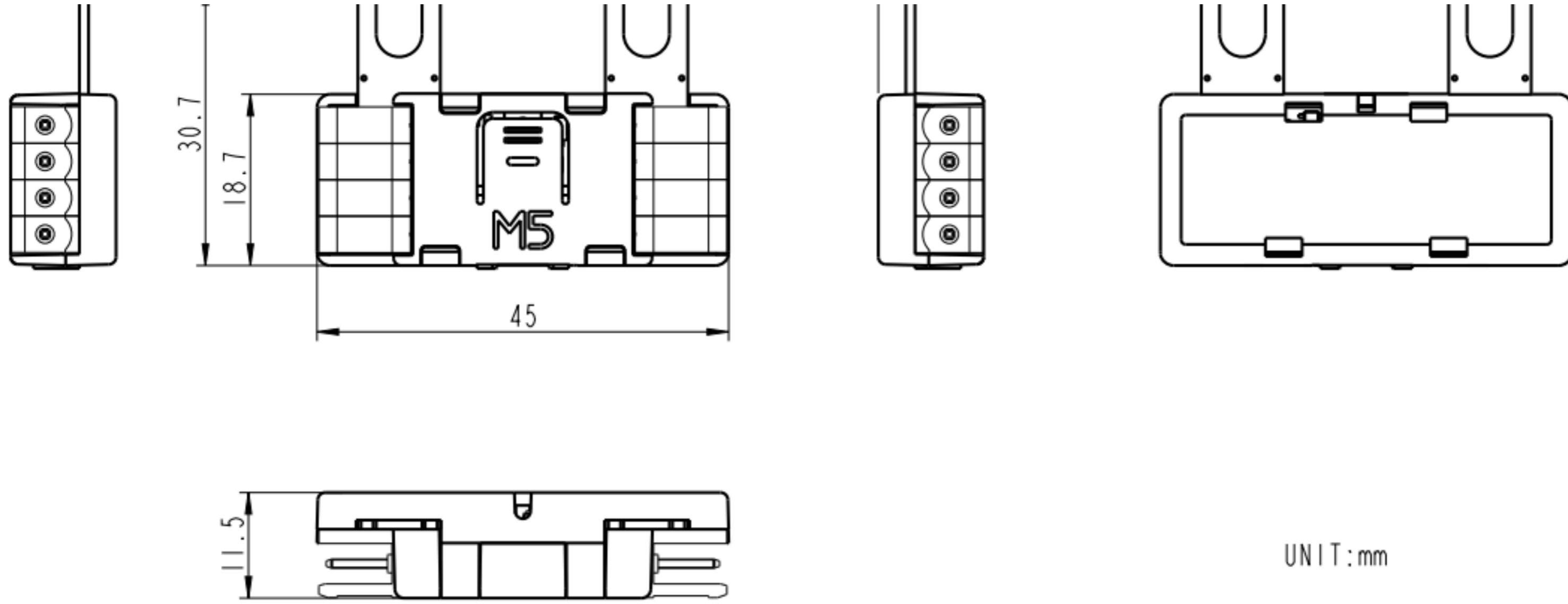| Resources	Parameters
Main Controller	ESP32C3
Programmable RGB LED	SK6812
Load Current	10A
Input Control Voltage	3-32VDC
Load Voltage	24~220VDC
Input Control Current	5mA~20mA
Breakdown Leakage Current	≤5mA
On-state Buck	≤1.6V
Operating current safety series	resistive load: 50% Inductive load: 50%
Electrical life time	≥1 million times
Indicator Light	Red (Lighted: Closed / Off: Disconnected)
Product Size	80 * 45 * 31mm
Package Size	147 * 90 * 40mm
Product Weight	112.6g
Package Weight	137.8g

Schematic

AC/DC SSR UNIT

POWER / BOOT

SSR STATUS

BTN   LED

Restart

BTN Long Press > 2S

NO

YES

Release BTN

RUNNING CYCLE

BTN MODE

SSR=OFF

LED

↕

BTN Press

↓

LED

SSR=ON

I2C MODE (ADDR:0x50)

0x00(r/w): 1->SSR ON
       0-> SSR OFF
0x10~12(r/w): LED_R/G/B
0x20(r/w): I2C Slave Address
0xFE(r): Ver.Number

ModBus MODE   Default Address:0x0004

PARA.	TYPE	FUNC.	REG.	VALUE
SSR	Coil	01/05	0x0000	0:OFF/1:ON
LED	Holding	03/06	0x0000	RGB(565)
VER.	Holding	03/06	0x0001	0x????
ADDR.	Holding	03/06	0x0002	0x????

SETTING CYCLE

Press BTN to Next Mode.

LED → **BTN**

LED → **I2C**

LED → **ModBus**

Long Press >2S to confirm.

M5STACK

Module Size

36

9   9

3

UNIT:mm

Examples

Arduino

- M5Unit-DCSSR-Library
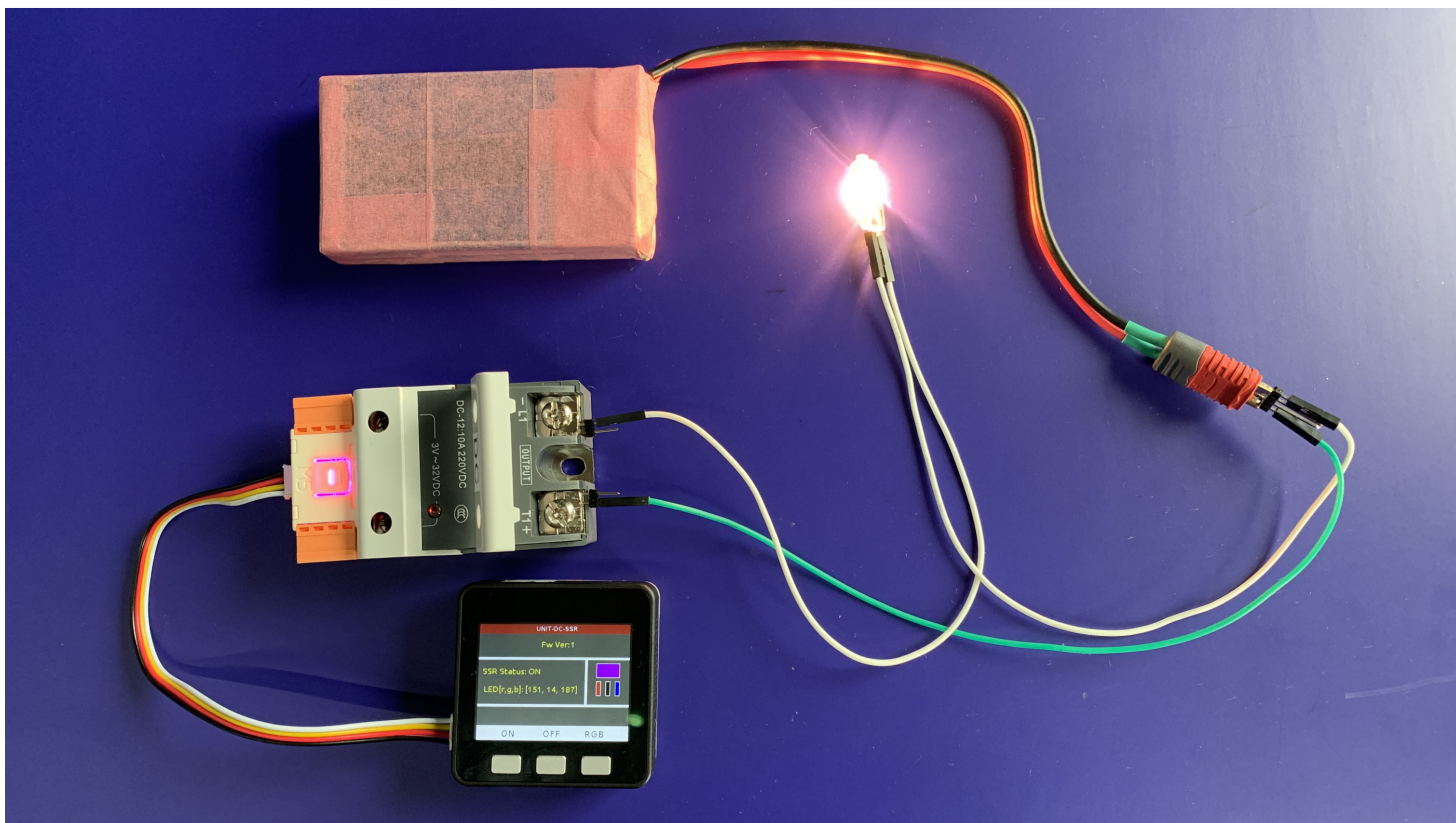
- Arduino485-Library

- ArduinoModbus-Library
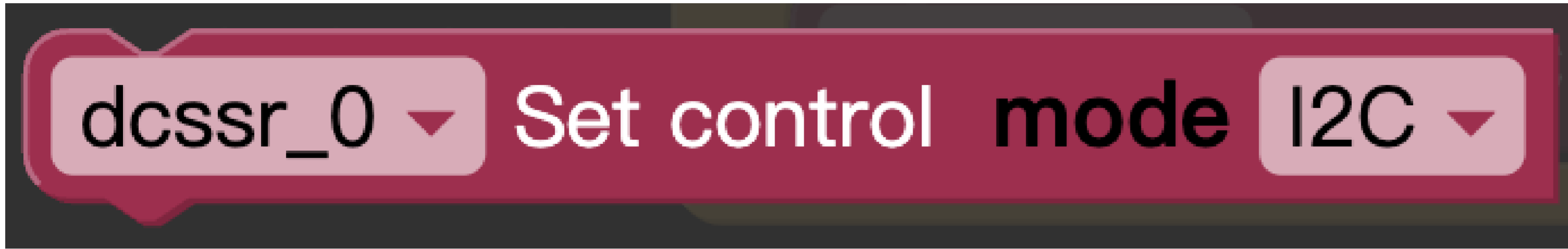
UIFlow

- [DCSSR Unit UIFlow Example](DCSSR-Unit-UIFlow-Example)
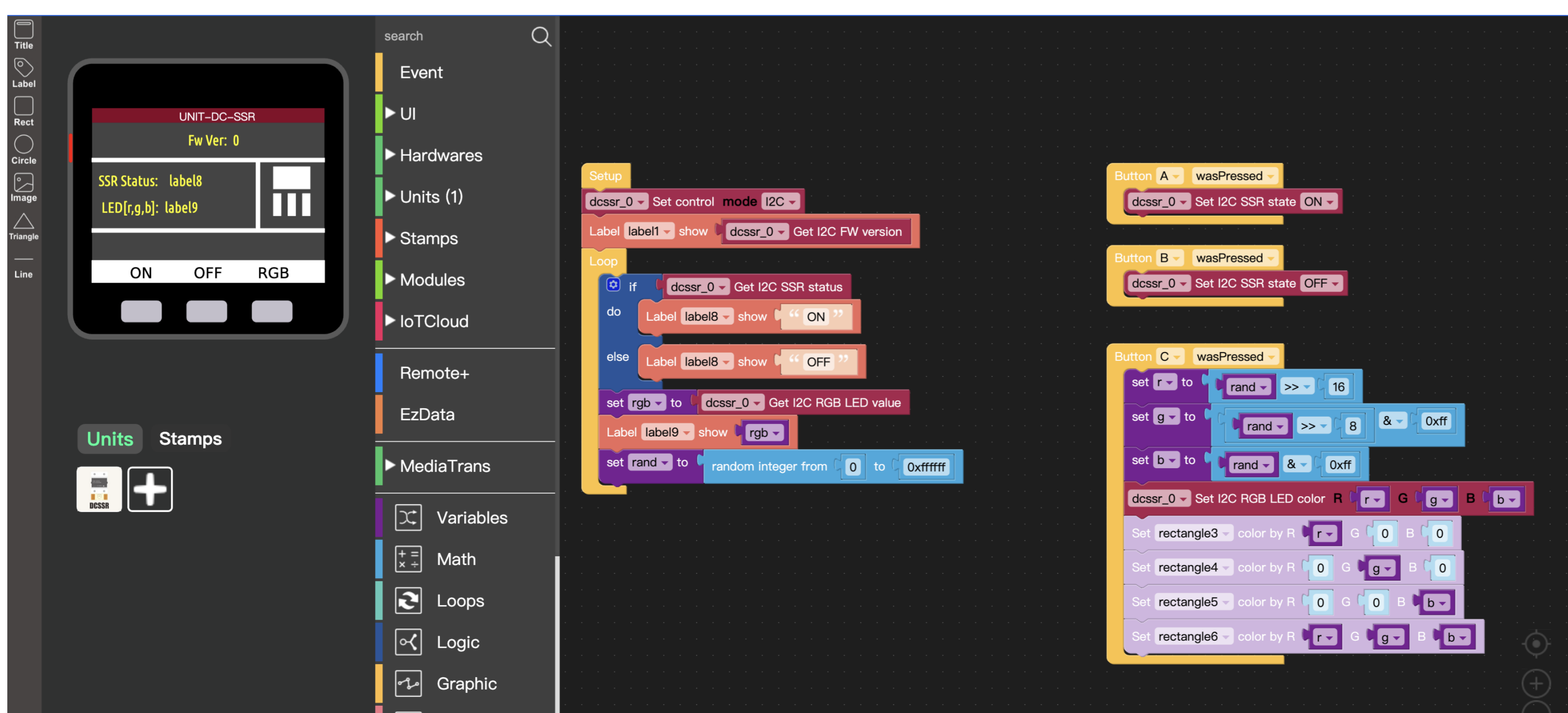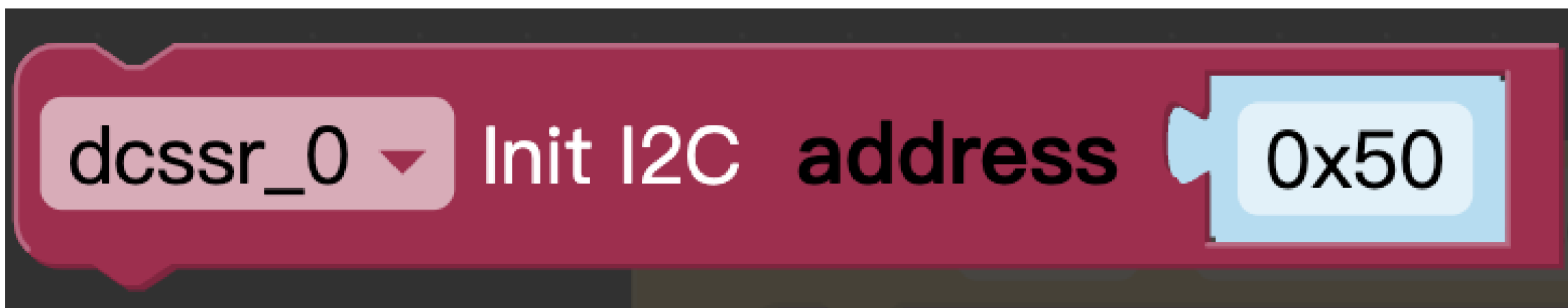
UIFlow Blocks

○ Set control mode (I2C / Modbus)

dcssr_0 ⌄ Set control mode I2C ⌄

○ Init I2C address

dcssr_0 ⌄ Init I2C address 0x50

○ Get I2C RGB LED value

dcssr_0 ⌄ Get I2C RGB LED value

○ Set I2C SSR state

dcssr_0 ⌄ Set I2C SSR state ON ⌄

○ Set I2C RGB LED color

dcssr_0 ⌄ Set I2C RGB LED color R 50 G 50 B 50

○ Set I2C address

dcssr_0 ⌄ Set I2C address 0x50

○ Init modbus

dcssr_0 ⌄ Init modbus slave address 4 UART id 1 ⌄ baudrate 115200 data bits 8 ⌄ stop bits 1 ⌄ parity None ⌄

○ Get modbus SSR status

dcssr_0 ▾ Get modbus SSR status

- Get modbus RGB LED value

dcssr_0 ▾ Get modbus RGB LED value

- Get modbus FW version

dcssr_0 ▾ Get modbus FW version

- Set modbus SSR state

dcssr_0 ▾ Set modbus SSR state ON ▾

- Set modbus RGB LED color

dcssr_0 ▾ Set modbus RGB LED color R 50 G 50 B 50

- Set modbus address

dcssr_0 ▾ Set modbus address 0x50