Hardware Specifications

Block Diagram

process

outputs → SERVO PWM (SAFE)

→ DISPLAY OLED I2C

input → **Raspberry Pi Pico W** → LEDS

KEYPAD → BUZZER PWM
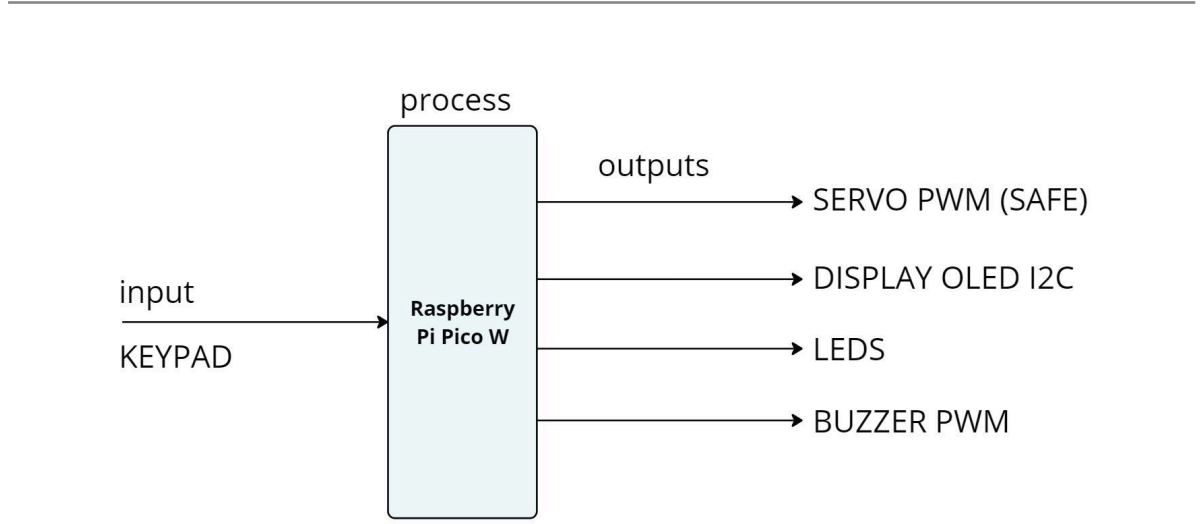
Hardware Components

Component	Description
Raspberry Pi Pico	Microcontroller
SSD1306 OLED Display	User feedback
4x4 Keypad	User input for password
SG90 Servo Motor	Controls the safe lock
Buzzer	Sound alerts
LEDs (Green/Red)	Status indicators

Pin Configuration

Component	Pin(s)	Function
Keypad Rows	28, 27, 26, 22	Input
Keypad Columns	21, 20, 19, 18	Input
OLED Display	SDA (4), SCL (5)	I2C Communication
Servo Motor	GPIO 15	Lock Control
Buzzer	GPIO 1	Sound Alerts
Green LED	GPIO 17	Safe Open Indicator
Red LED	GPIO 16	Error/Lock Indicator

Circuit Schematic