

Raspberry Pi Pico

Microcontrollers / RP2040 / 3.3 V

GPIO functions and header positions for the original RP2040 Pico.

01 Header map

GPIO

GP0-GP22 and GP26-GP28 are exposed. All support PWM; channels share slices.

ADC

GP26 = pin 31, GP27 = pin 32, GP28 = pin 34; ADC ground = pin 33.

Power pins

VBUS 40; VSYS 39; GND 38; 3V3_EN 37; 3V3(OUT) 36; ADC_VREF 35.

02 Bus examples

I2C0

SDA GP4 (pin 6) / SCL GP5 (pin 7).

SPI0

RX/MISO GP16 (21), CS GP17 (22), SCK GP18 (24), TX/MOSI GP19 (25).

UART0

TX GP0 (pin 1) / RX GP1 (pin 2).

Analog scale

Hardware ADC is 12-bit; MicroPython `read_u16()` scales to 0-65535.

03 Board basics

Power

VSYS accepts 1.8-5.5 V per board documentation; GPIO never accepts 5 V.

LED

Original Pico LED is GP25; Pico W uses a different LED connection. Use `Pin("LED")`.

Bootloader

Hold BOOTSEL while connecting USB to load UF2 firmware.

Before you power on

GP numbers and physical header numbers differ. Keep ADC input within 0-3.3 V and respect ADC_VREF.

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Datasheets & further reading

Raspberry Pi Pico documentation

<https://www.raspberrypi.com/documentation/microcontrollers/pico-series.html>

MicroPython RP2 reference

<https://docs.micropython.org/en/latest/rp2/quickref.html>