PIN CONNECTION EXP06:

**1. OLED Display (SSD1306 I2C 128x64 or 128x32)**

The OLED display uses the I2C communication protocol, so it requires two pins for communication (SDA and SCL) and power pins.

**Pin Connections for OLED (I2C)**

* **VCC** (OLED) → **3.3V** (ESP32)
* **GND** (OLED) → **GND** (ESP32)
* **SDA** (OLED) → **GPIO 21** (ESP32 I2C Data Line)
* **SCL** (OLED) → **GPIO 22** (ESP32 I2C Clock Line)

Note: Some ESP32 boards might have different default I2C pins, but GPIO 21 (SDA) and GPIO 22 (SCL) are commonly used.

**2. Rotary Encoder**

The rotary encoder has three main pins for tracking position (CLK, DT, SW) and additional power pins for operation.

**Pin Connections for Rotary Encoder**

* **CLK** (Encoder) → **GPIO 18** (ESP32) – Clock/Pin A
* **DT** (Encoder) → **GPIO 19** (ESP32) – Data/Pin B
* **SW** (Encoder) → **GPIO 23** (ESP32) – Switch/Button
* **VCC** (Encoder) → **3.3V** (ESP32) or **5V** (if required by the encoder)
* **GND** (Encoder) → **GND** (ESP32)