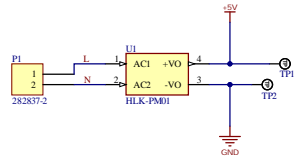


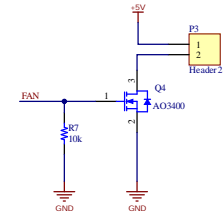
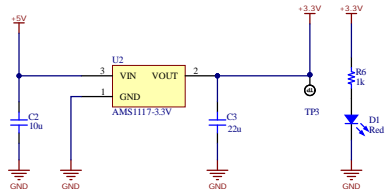
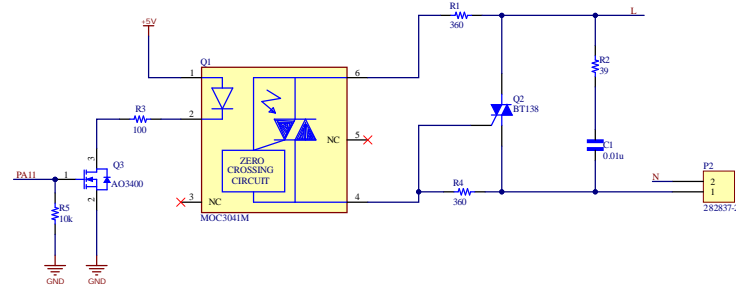
The diagram illustrates an AC-DC converter circuit. It features a power source labeled 'P1' with terminals 1 and 2, and a component identifier '282837-2'. Terminal 1 is connected to the 'L' (Line) input of the 'HLLK-PMB01' module. Terminal 2 is connected to the 'N' (Neutral) input. The module's output terminals are 4 and 3. Terminal 4 is connected to a '+5V' supply and a test point 'TP1'. Terminal 3 is connected to a ground symbol labeled 'GND' and a test point 'TP2'. The module is also labeled with 'AC1 +VO' and 'AC2 -VO'.



TRIAC Circuit

The diagram illustrates a TRIAC circuit, likely a zero-crossing detector or a phase-locked loop (PLL) circuit. The circuit components and their connections are as follows:

- Power Supply:** A 5V supply is connected to the circuit.
- Resistors:**
 - $R1 = 360\ \Omega$ is connected between the 5V supply and the output terminal.
 - $R2 = 39\ \Omega$ is connected between the output terminal and the output terminal.
 - $R3 = 100\ \Omega$ is connected between the 5V supply and the input terminal.
 - $R4 = 350\ \Omega$ is connected between the input terminal and the output terminal.
 - $R5 = 10k\ \Omega$ is connected between the input terminal and ground.
- Capacitor:** A capacitor $C1 = 0.01\mu F$ is connected between the output terminal and ground.
- Optoisolator:** The MOC3041M optoisolator is the central component. It has a "ZERO CROSSING CIRCUIT" block. The input terminal is connected to the input of the optoisolator. The output terminal is connected to the output of the optoisolator.
- AC Source:** The circuit is connected to a 230V AC source (P2) through a 282837-2 component.



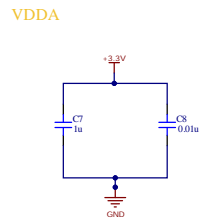
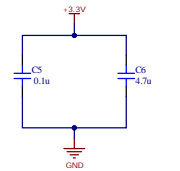
Decoupling Cap

VDD

0.1uF (C5) and 4.7uF (C6) capacitors connected between VDD (3.3V) and GND.

VDDA

1uF (C7) and 0.01uF (C8) capacitors connected between VDDA (3.3V) and GND.

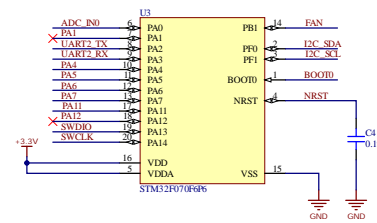


The diagram shows the pin connections for the STM32F070RQ6 microcontroller. The chip is represented by a yellow rectangle with pins numbered 1 to 16. The connections are as follows:

- Pin 1:** PA0
- Pin 2:** PA1
- Pin 3:** PA2
- Pin 4:** PA3
- Pin 5:** PA4
- Pin 6:** PA5
- Pin 7:** PA6
- Pin 8:** PA7
- Pin 9:** PA8
- Pin 10:** PA9
- Pin 11:** PA10
- Pin 12:** PA11
- Pin 13:** PA12
- Pin 14:** PA13
- Pin 15:** PA14
- Pin 16:** VDD

Additional connections and labels:

- ADC_IN0:** Connected to PA0.
- UART1_TX:** Connected to PA1.
- UART1_RX:** Connected to PA2.
- PA2:** Labeled as PA2.
- PA3:** Labeled as PA3.
- PA4:** Labeled as PA4.
- PA5:** Labeled as PA5.
- PA6:** Labeled as PA6.
- PA7:** Labeled as PA7.
- PA8:** Labeled as PA8.
- PA9:** Labeled as PA9.
- PA10:** Labeled as PA10.
- PA11:** Labeled as PA11.
- PA12:** Labeled as PA12.
- PA13:** Labeled as PA13.
- PA14:** Labeled as PA14.
- SWDIO:** Connected to PA15.
- SWCLK:** Connected to PA16.
- VDD:** Connected to Pin 16.
- VDDA:** Connected to Pin 5.
- VSS:** Connected to Pin 15.
- NRST:** Connected to Pin 4.
- BOOT0:** Connected to Pin 3.
- I2C_SCL:** Connected to Pin 2.
- I2C_SDA:** Connected to Pin 1.
- FAN:** Connected to Pin 14.
- CH:** Connected to Pin 15.
- 0.1u:** Connected to Pin 15.
- GND:** Connected to Pin 16.
- GND:** Connected to Pin 15.



The diagram shows a circuit for setting the BOOT pin. A +3.3V supply is connected to the SB1 pin of a component. The component also has a BOOT0 pin, which is connected to a 10k resistor (R10) leading to GND. The BOOT0 pin is also connected to a line labeled BOOT0.

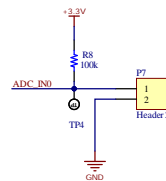
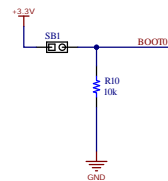


Diagram illustrating the SWD/UART/NRST header connections:

- UART2_RX
- UART2_TX
- SWDIO
- SWCLK
- NRST
- Header 6 (Pins 1-6)
- GND

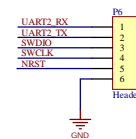
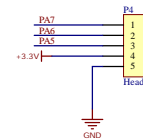


Diagram illustrating the wiring for a Rotary Encoder connected to a Raspberry Pi. The encoder's 5-pin header is connected to the Pi's P4 header. The connections are as follows:

- Encoder Pin 1 (PA7) to Pi Pin 1
- Encoder Pin 2 (PA6) to Pi Pin 2
- Encoder Pin 3 (PA5) to Pi Pin 3
- Encoder Pin 4 (+3.3V) to Pi Pin 4
- Encoder Pin 5 (GND) to Pi Pin 5



Wiring diagram for the I2C OLED module:

- Pin 1: I2C SDA
- Pin 2: I2C SCL
- Pin 3: +3.3V
- Pin 4: GND

