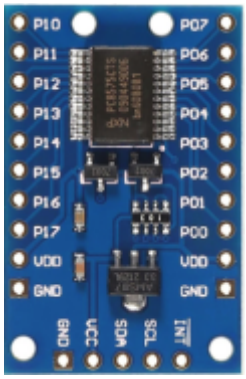
lamaPLC: PCF857x I/O Expander chip/modul with I²C communication

The PCF857x series consists of I²C-based general-purpose I/O (GPIO) expanders manufactured by NXP and Texas Instruments. They allow microcontrollers (such as Arduino, ESP32, or Raspberry Pi) to control multiple digital pins with only two wires: Serial Data (SDA) and Serial Clock (SCL).



Feature	PCF8574 / PCF8574A	PCF8575
GPIO Count	8-bit (8 pins)	16-bit (16 pins)
I²C Base Address	**0x20** (PCF8574) / **0x38** (PCF8574A)	**0x20**
Max Devices on 1 Bus	8 units	16 units
Operating Voltage	2.5V to 6V	2.5V to 5.5V
Interrupt Output	Yes (Open-drain INT)	Yes (Open-drain INT)

Main Control & Power Header

- **VCC:** Power input. Connects to **3.3V or 5V** to match your microcontroller's logic levels.
- **GND:** Common ground reference.
- **SDA:** Serial Data line for I²C communication.
- **SCL:** Serial Clock line for I²C communication.
- **INT:** Interrupt output (Active Low). Pulls low to alert the microcontroller when an input pin changes state, eliminating the need for software polling.

8/16-Bit I/O Extension Pins

- Port 0 (P00 to P07): The first group of 8 quasi-bidirectional GPIO pins.
- Port 1 (PCF8575 only, P10 to P17): The second group of 8 quasi-bidirectional GPIO pins.