

lamaPLC: Signal level converters

PCA9306 I²C Voltage Level Translator

When the supply voltages are mismatched, the best option is to use a dedicated device to bridge them.

Allows voltage level translation between:

- 1.0V Vref (1) and 1.8V, 2.5V, 3.3V or 5V Vbias (ref) (2)
- 1.2V Vref (1) and 1.8V, 2.5V, 3.3V or 5V Vbias (ref) (2)
- 1.8V Vref (1) and 3.3V or 5V Vbias (ref) (2)
- 2.5V Vref (1) and 5V Vbias (ref) (2)
- 3.3V Vref (1) and 5V Vbias (ref) (2)

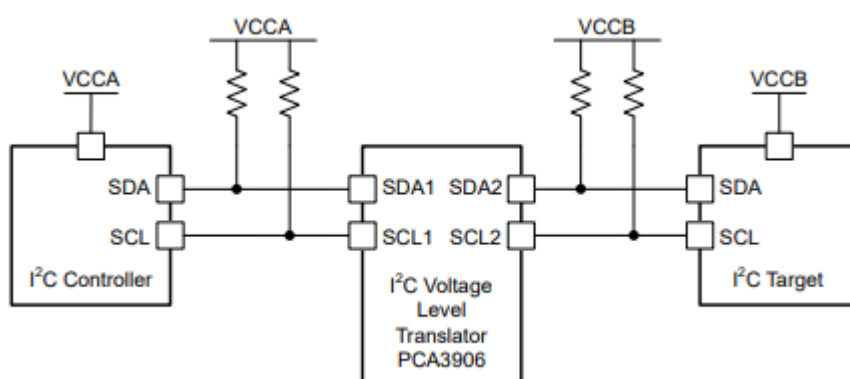


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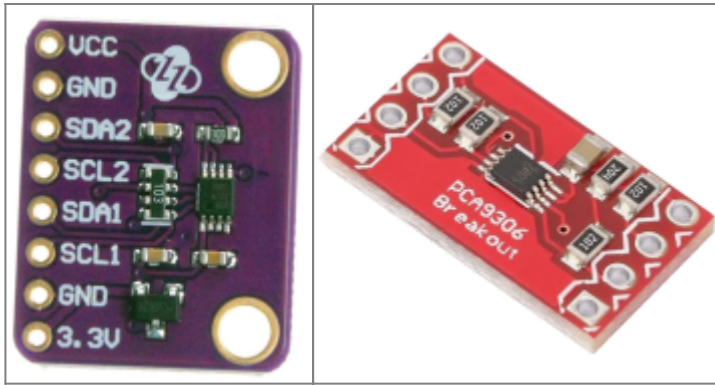
2026/02/14 23:38

The next image shows an example of using an I²C voltage-level translator to bridge communication between two different supply voltages. There are two sets of pullups, one for each voltage level. As a common voltage translator, the PCA9306 enables communication between different supply levels:



Application of PCA9306 for I²C communication: [here](#).

Several manufacturers produce compact modules using the PCA9306 IC. The picture below shows DollaTek's module (for example, you can find it on Amazon):



I2C topics on lamaPLC

Page	Date	Tags
<ul style="list-style-type: none"> • lamaPLC Communication: 1-Wire 	2026/04/23 21:51	1-wire, communication, bus, microlan, i2c, uart, usart, ds18b20
<ul style="list-style-type: none"> • lamaPLC Communication: I²C 	2025/09/23 21:25	i2c, i c, smbus, philips, bus, communication, arduino
<ul style="list-style-type: none"> • lamaPLC project: Sension SCD CO² measurement module 	2026/04/15 19:34	scd30, scd40, scd41, iaq, ndir, sensor, i2c, arduino code
<ul style="list-style-type: none"> • LamaPLC: AHT10 Modul 	2026/03/22 03:14	communication, i2c, temperature, humidity, sensor, aht, aht 10, modul
<ul style="list-style-type: none"> • LamaPLC: AHT20 / BMP280 Modul 	2026/04/23 21:52	bmp280, aht20, adafruit, temperature, humidity, pressure, sensor, arduino, code, i2c
<ul style="list-style-type: none"> • LamaPLC: APDS - Avago ALS and proximity detection sensors with I²C communication 	2026/04/23 21:52	avago, apds-9900, apds-9930, apds-9960, als, proximity, detection, gesture recognition, gesture, i2c, communication, sensor, arduino, code
<ul style="list-style-type: none"> • lamaPLC: Arduino Modul: BME680 	2026/05/12 18:40	code, c, 2026, arduino, bme680, sensor, i2c, communication
<ul style="list-style-type: none"> • lamaPLC: AS5600 Magnetic Induction Angle Measurement Sensor Module 	2026/04/23 21:52	communication, i2c, as5600, as-5600, magnetic, induction, angle, sensor
<ul style="list-style-type: none"> • lamaPLC: Bi-Directional Logic Level Converter 3.3V ↔ 5V 	2026/04/12 00:34	bi-directional, logic level converter, i2c, uart, spi
<ul style="list-style-type: none"> • LamaPLC: BMP/BME Bosch Temperature/Humidity/Pressure sensors with I²C communication 	2026/04/23 21:52	bme280, bme680, bme688, bmp180, bmp280, hw-611, hw611, bosch, temperature, humidity, pressure, sensor, arduino, i2c, communication, ai, cjmcu, volatile organic compounds, vocs, volatile sulfur compounds, vscs, iaq
<ul style="list-style-type: none"> • LamaPLC: CJMCU-219/INA-219 breakout board/IC with I²C communication 	2026/04/23 21:52	cjmcu-219, ina-219, ina219, breakout board, i2c, communication, sensor, voltage, current, arduino, code, cjmcu
<ul style="list-style-type: none"> • LamaPLC: CJMCU-3216 / AP-3216 integrated digital ambient light and proximity sensor module/IC with I²C communication 	2026/04/23 21:52	cjmcu-3216, cjmcu, ap-3216, ap3216, ambient light, proximity, sensor, arduino, code, i2c, communication

- [lamaPLC: CJMCU-811 CCS811 Gas Sensor \(VOCs TVOC CO2\)](#) 2026/04/23 21:52

[cjmcu-811](#), [ccs811](#), [gas](#), [sensor](#), [vocs](#), [tvoc](#), [eco2](#), [co2](#), [arduino](#), [air quality metal oxide](#), [mox](#), [i2c](#), [micropython](#), [rp2040-eth](#)
- [LamaPLC: D6T Omron Non-Contact Thermal Sensors with I²C communication](#) 2026/04/23 21:52

[d6t](#), [d6t-32l](#), [d6t-44l](#), [d6t-8l](#), [d6t-1a](#), [omron](#), [non-contact](#), [thermal](#), [sensor](#), [i2c](#), [arduino](#), [code](#)
- [LamaPLC: DPS Infineon Temperature/Pressure sensors with I2C communication](#) 2026/04/23 21:52

[dps310](#), [infineon](#), [temperature](#), [pressure](#), [sensor](#), [arduino](#), [i2c](#), [communication](#), [code](#)
- [lamaPLC: Energy, power, current, and voltage](#) 2025/05/31 23:32

[i2c](#), [i c](#), [communication](#), [arduino](#), [energy](#), [power](#), [current](#), [sensor](#), [ina226](#)
- [LamaPLC: ENS ScioSense Multi-gas sensors with I²C communication](#) 2026/04/23 21:52

[ens160](#), [sciosense](#), [gas-quality](#), [i2c](#), [communication](#), [sensor](#), [arduino](#), [code](#), [eco2](#), [tvoc](#), [aqi](#), [indoor air quality](#), [iaq](#), [co2](#), [voc](#)
- [lamaPLC: ESP32 / ESP8266](#) 2025/11/22 00:07

[esp8266](#), [esp32](#), [esp32-c2](#), [esp32-c3](#), [esp32-c5](#), [esp32-c6](#), [esp32-c61](#), [esp32-h2](#), [esp32-s2](#), [esp32-s3](#), [esp32-p4](#), [espressif systems](#), [communication](#), [ethernet](#), [ip](#), [wi-fi](#), [thread](#), [zigbee](#), [matter](#), [homekit](#), [bluetooth](#), [mqtt](#), [adc](#), [spi](#), [uart](#), [i2c](#), [i2s](#), [rmt](#), [pwm](#), [usb](#), [usb otg](#), [twai](#)

[gas](#), [sensor](#), [i2c](#), [onewire](#), [communication](#), [mq-3](#), [mq-4](#), [mq-5](#), [mq-6](#), [mq-7](#), [mq-8](#), [mq-9](#), [mq-135](#), [gm-102b](#), [gm-302b](#), [gm-502b](#), [gm-702b](#), [alcohol](#), [ch4](#), [natural gas](#), [smoke](#), [lng](#), [co](#), [co2](#), [lpg](#), [h2](#), [iso-butane](#), [nox](#), [nh3](#), [benzene](#), [town gas](#), [formaldehyde](#), [propane](#), [humidity](#), [temperature](#), [voc](#), [grv gas sens v2](#)
- [LamaPLC: Gas sensors](#) 2023/07/01 17:29

[stmicroelectronics](#), [lsm303dlhc](#), [i2c](#), [lsm303](#), [sensor](#), [gy-511](#), [6dof](#), [pololu](#), [module](#), [arduino](#)
- [LamaPLC: GY-511 6DOF sensor module](#) 2026/03/22 01:44

[ak8963](#), [gy-9250](#), [mpu-9250](#), [9-axis](#), [motion detection](#), [magnetometer](#), [communication](#), [i c](#), [i2c](#), [spi](#)
- [LamaPLC: GY-9250 MPU-9250/6500 9-axis Attitude Sensor Board](#) 2026/04/23 21:52

[sht21](#), [htu21](#), [si7021](#), [gy-21](#), [gy-213v](#), [hdc1080](#), [gy-213v-hdc1080](#), [cjmcu](#), [cjmcu-1080](#), [texas instruments](#), [temperature](#), [humidity](#), [sensor](#), [i2c](#), [communication](#), [arduino](#), [code](#)
- [LamaPLC: HDC Texas Instruments Temperature/humidity sensors with I²C communication](#) 2026/04/23 21:52

[i2c](#), [7-segment display](#), [display](#), [ht16k33](#), [arduino](#)
- [lamaPLC: HT16K33 display controller](#) 2026/04/23 21:51

[htu](#), [htu31d](#), [htu21d](#), [htu20d](#), [sht20](#), [htu20](#), [sht21](#), [htu21](#), [si7021](#), [gy-21](#), [gy-213v](#), [hdc1080](#), [si702](#), [gy-20](#), [sht31](#), [htu31](#), [si7031](#), [gy-31](#), [te connectivity](#), [temperature](#), [humidity](#), [i2c](#), [communication](#), [sensor](#), [arduino](#), [code](#)
- [LamaPLC: HTU TE Connectivity temperature/humidity sensors with I²C communication](#) 2026/04/23 21:52

• lamaPLC: INA modules with Arduino libraries	2026/04/11 19:54	i2c, i c, communication, arduino, energy, power, current, monitor, sensor, ina219, gy-219, ina226, gy-216, ina228, gy-228, ina237, ina238, ina260, ina3221, ina
• lamaPLC: INA226 - current/voltage/power monitor with I²C communication	2026/04/23 21:52	i2c, i c, communication, arduino, energy, power, current, monitor, sensor, ina226, ina219, ina
• lamaPLC: LCD 1602/2004 with I²C communication	2026/02/14 18:27	communication, i2c, display, lcd, 1602, 2004, hd44780, pcf8574, pcf8574t, pcf8574at, arduino
• LamaPLC: MAX30100/MAX30102 Heart Rate Click Sensor Module	2026/04/23 21:52	max30102, max30100, heart rate click, sensor, communication, i2c, arduino, code
• lamaPLC: MCP23017 / MCP23S17 16-Bit I/O Expander with Serial Interface I²C / SPI	2026/04/23 21:52	communication, i2c, mcp23017, mcp23s17, spi, i o expander, serial, cjmcu-2317, cjmcu
• lamaPLC: MLX90614 (GY-906) infrared non-contact thermometer	2026/05/08 00:03	communication, i2c, temperature, mlx90614, gy-906, modul, infrared, non-contact thermometer, dsp, pwm, smbus, hailege
• LamaPLC: Pixart PAJ7620U2 Gesture recognition sensors/module with I²C communication	2026/04/23 21:52	paj7620u2, gy-paj7620, pixart, gesture recognition, i2c, communication, sensor, arduino, code
• lamaPLC: RP2040_ETH_Modul: I²C scanner	2026/05/12 16:20	code, micropython, 2026, rp2040 eth, i2c, comunication
• lamaPLC: RP2040_ETH_Modul: MLX90614 simple	2026/05/12 17:06	code, micropython, 2026, rp2040 eth, i2c, communication, mlx90614
• lamaPLC: RP2040_ETH_Modul: Read BME 680/688 sensor data	2026/05/12 21:06	code, micropython, 2026, rp2040 eth, bme680, i2c, sensor, communication
• lamaPLC: RP2040_ETH_Modul: Read BME 680/688 sensor data and store in Modbus input registers	2026/05/12 18:58	code, micropython, 2026, rp2040 eth, bme680, i2c, sensor, communication
• LamaPLC: SC16IS750 / SC16IS752: One or two serial (UART) ports from microcontroller via I²C or SPI communication	2026/04/23 21:52	cjmcu-750, cjmcu-752, cjmcu, nxp, sc16is750, sc16is752, uart, serial, i2c, spi, modul, converter, arduino, code
• LamaPLC: SGP Sensirion TVOC/VOC sensors with I²C communication	2026/04/15 19:41	sgp30, sgp40, sgp41, sensirion, gas-sensor, i2c, communication, sensor, arduino, code, eco2, voc, tvoc, indoor air quality, iaq, nox, hydrogen
• LamaPLC: SHT Sensirion Temperature/humidity sensor with I²C communication	2026/04/23 21:52	sht20, sht21, sht25, sht30, sht31, sht35, sht40, gy21, temperature, humidity, i2c, communication, sensor, arduino, code
• lamaPLC: Signal level converters	2026/02/14 23:47	pca9306, i2c, voltage, level, converter
• lamaPLC: TCA9548A (HW617); Low-Voltage 8-Channel I²C Switch Module	2026/02/14 23:51	tca9548a, hw617, i2c, switch, communication, expansion board, arduino
• lamaPLC: TM1637 7-segment display	2026/02/14 18:26	i2c, 7-segment display, display, tm1637, arduino

- [LamaPLC: TOFnnnC STMicroelectronics Time-of-Flight \(ToF\) sensors with I²C communication](#) 2026/04/23 21:52 tof050c, vl6180, tof200c, vl53l0x, tof400c, vl53l1x, stmicroelectronics, time-of-flight, tof, i2c, communication, sensor, arduino, code
- [LamaPLC: VL53Lnn STMicroelectronics time-of-flight \(ToF\) laser-ranging sensors with I²C communication](#) 2026/04/23 21:52 vl53l0x, vl53l1x, vl53l0 1xv2, gy-530, time-of-flight, tof, laser-ranging, i2c, communication, sensor, arduino, code
- [LamaPLC: VL6180X STMicroelectronics Time-of-Flight \(ToF\) sensor with I²C communication](#) 2026/04/23 21:52 vl6180x, stmicroelectronics, time-of-flight, tof, i2c, communication, sensor, arduino, code
- [Magnetic angle sensors](#) 2026/03/05 21:19 magnetic angle sensor, magnetic flux, sensor, spi, i2c, pwm, communication, modul, as5047p, as5600, mt6701, mt6816, mt6835, tle5012b, amr, gmr, tmr, anisotropic magnetoresistive
- [SSH1106/SSD1306 OLED Display with I²C communication](#) 2026/02/14 18:27 i2c, oled, display, ssd1306, sh1106, ssh1106, arduino, cmos

[PCA9306](#), [I2C](#), [Voltage](#), [Level](#), [converter](#)

This page has been accessed for: Today: 1, Until now: 95

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