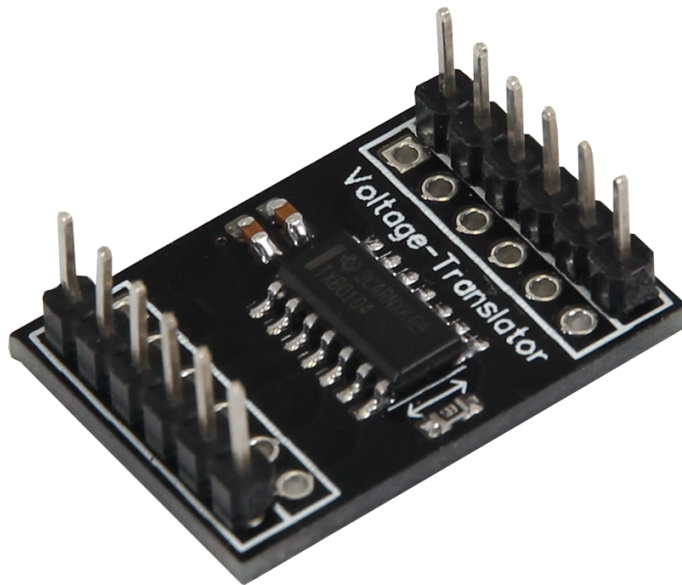


# COM-KY051VT

Voltage translator



## 1. GENERAL INFORMATION & SAFETY INSTRUCTIONS

Dear customer,

Thank you for choosing our product.

In the following, we will show you what to consider during commissioning and use. If you experience any unexpected problems during use, you are welcome to contact us.

This level shifter converts digital signals from one voltage level to another. There are 4 available channels that can be converted.

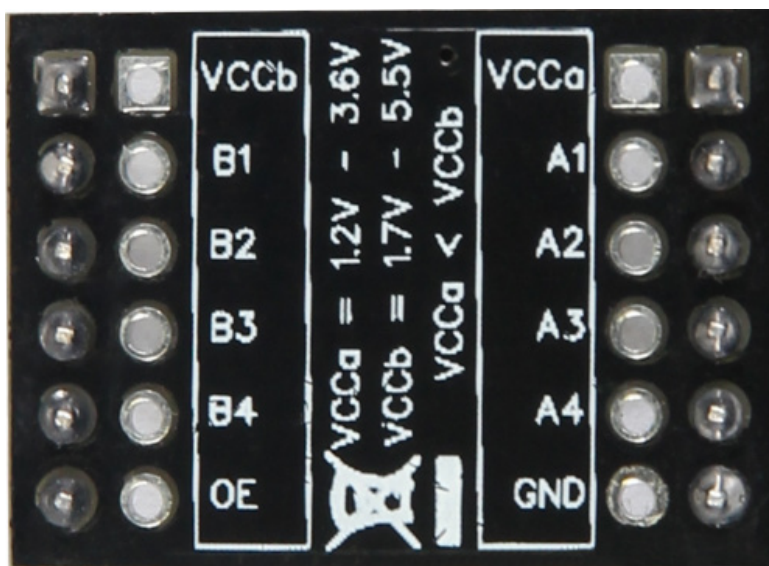
At present, there are many microcontroller systems operating in different voltage ranges: e.g. the inputs and outputs of older systems such as Arduino, based on an Atmega controller, with 5V level, the newer Raspberry Pi computers based on an ARM controller, with a voltage level of 3.3V.

This can be explained by the fact that higher voltages had to be used in the communication between microcontrollers, because the input stages have a higher distance between the voltage level for [Digital ON] = 5V and for [Digital OFF] due to noise / interference in the cables. = 0V have needed - In the course of the modernization input / output stages of the controllers have become significantly better and you want to keep the voltage used as low as possible today, so that heat generation and power consumption decrease. So today the use of 1.8V systems is not uncommon.

However, if you want to communicate between two systems with two different voltage levels (like the lower example Arduino -> Raspberry Pi), the voltage level has to be „shifted“ - If this is not done, the system with the lower voltage level has to apply the excess voltage to the voltage level Input levels „consume in heat“. Depending on the system, this can lead to permanent damage to the system.

## 2. PINOUT

The pin assignment is printed on the module board.



The signals at the inputs/outputs A1-A4 are shifted to the respective voltage level ( $VCCa \rightarrow A1-A4$  |  $VCCb \rightarrow B1-B4$ )

Example :

Arduino output  $\rightarrow$  Digital [ON] = 5V @ B1  $\ggg$  3,3V @ A1  $\rightarrow$  Raspberry input

Additional software or code is not required for operation; the module works autonomously.

**Please note that VCCb must be greater than / equal to VCCa (example VCCb = 5V - VCCa = 3,3V)**

### 3. CONNECTION EXAMPLE

#### Example connection assignment between Arduino | Raspberry Pi:

Pin assignment Arduino:

COM-KY051	Arduino
VCCb	Pin 5V
B1	Pin 03
B2	Pin 04
B3	Pin 05
B4	Pin 06
GND	Pin GND

Pin assignment Raspberry Pi:

COM-KY051	Raspberry Pi
VCCa	3,3V (Pin 01)
A1	GPIO 18 (Pin 12)
A2	GPIO 03 (Pin 05)
A3	GPIO 2 (Pin 03)
A4	GPIO 14 (Pin 08)
GND	GND (Pin 06)

**Please note that VCCb must be greater than / equal to VCCa (example VCCb = 5V - VCCa = 3,3V)**

Please ensure that both systems are connected to the same GND (ground) - OE does not need to be connected to this module.

### 4. FURTHER INFORMATION

Our information and take-back obligations according to the ElektroG

**Symbol on electrical and electronic equipment:**



This crossed-out dustbin means that electrical and electronic equipment does **not** belong in the household waste. You must return the old appliances to a collection point. Before handing over waste batteries and accumulators that are not enclosed by waste equipment must be separated from it.

**Return options:**

As an end user, you can return your old appliance (which essentially fulfils the same function as the new appliance purchased from us) free of charge for disposal when you purchase a new appliance. Small appliances with no external dimensions greater than 25 cm can be disposed of in normal household quantities independently of the purchase of a new appliance.

**Possibility of return at our company location during opening hours:**

SIAMC Electronics GmbH, Pascalstr. 8, D-47506 Neukirchen-Vluyn

**Possibility of return in your area:**

We will send you a parcel stamp with which you can return the device to us free of charge. Please contact us by e-mail at [Service@joy-it.net](mailto:Service@joy-it.net) or by telephone.

**Information on packaging:**

If you do not have suitable packaging material or do not wish to use your own, please contact us and we will send you suitable packaging.



## 6. SUPPORT

We are also there for you after your purchase. If any questions remain open or problems arise, we are also available by e-mail, telephone and ticket support system.

E-Mail: [service@joy-it.net](mailto:service@joy-it.net)

Ticket-System: <http://support.joy-it.net>

Phone: +49 (0)2845 98469 – 66 (10 - 17 clock)

For more information visit our website:

[www.joy-it.net](http://www.joy-it.net)