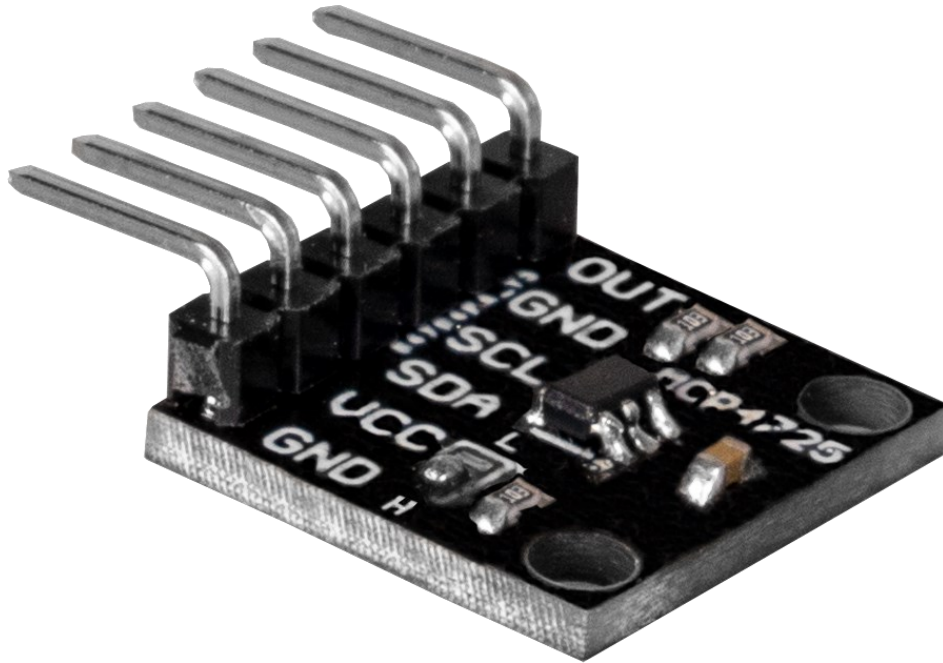# DIGITAL- ANALOG CONVERTER

COM-DAC01


1. GENERAL INFORMATION

Dear customer,
thank you very much for choosing our product.
In the following, we will introduce you to what to observe while starting up and using this product.
Should you encounter any unexpected problems during use, please do not hesitate to contact us.

2. CHANGE I2C ADDRESS

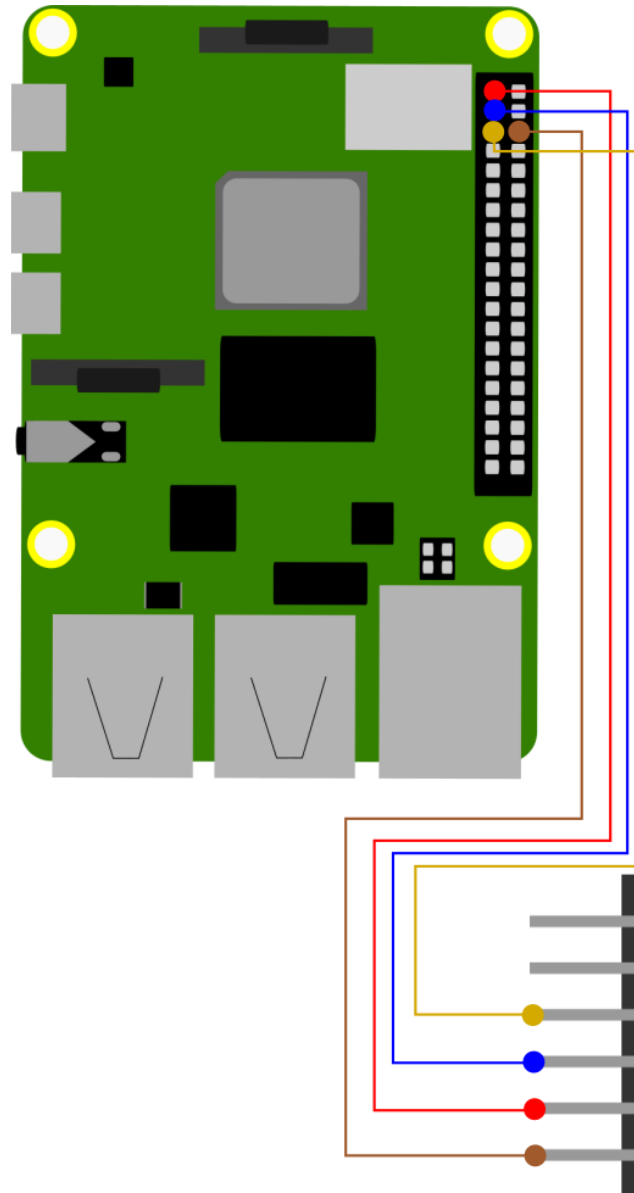You can change the I2C address of this converter by means of a soldering bridge. Thereby, the address will change from 0x60 to 0x61 after soldering.
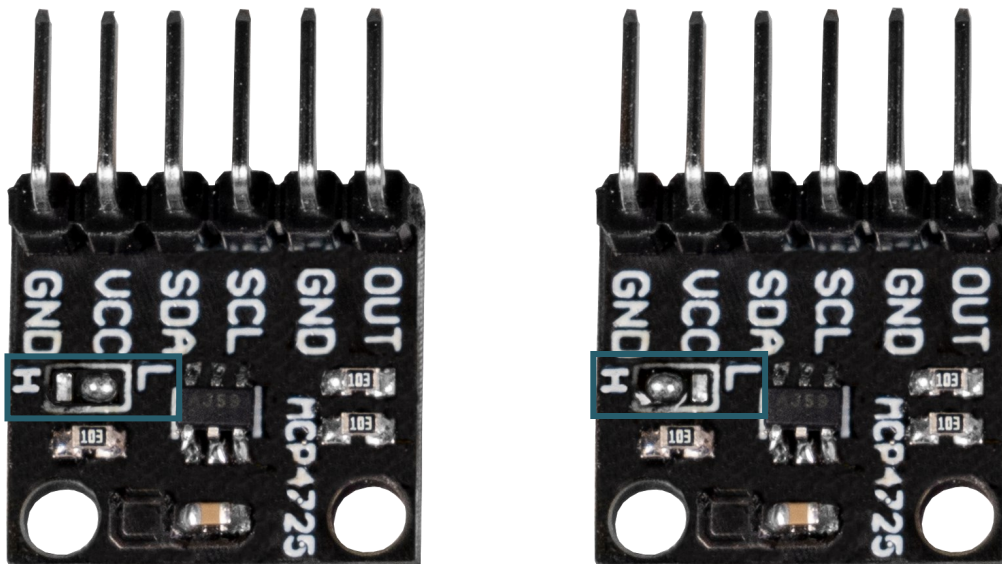
Soldering bridge	Address
L	0x60
H	0x61

3.1 Connection

COM-DAC01	Raspberry Pi
OUT	-
GND	-
SCL	GPIO 3
SDA	GPIO 2
VCC	3.3 V
GND	GND

The analog output of the converter is at the pin **OUT**.

3.2 Code example

First, enable the I2C interface of your Raspberry Pi. To do this, enter the following command into your terminal.

```
sudo raspi-config
```

There, select **3 Interface Options** → **I5 I2C**.

There, activate I2C.

To use the digital-analog converter, we use the **Adafruit_CircuitPython_MCP4725** library, which is published by **Adafruit** under the licenses *MIT*, *Unlicense* and *CC-BY-4.0*. Now, run the following commands to install this library.

```
sudo apt-get update
```

```
sudo apt-get install git
```

```
sudo apt-get install python3-pip
```

```
sudo git clone https://github.com/adafruit/Adafruit_CircuitPython_MCP4725.git
```

```
cd Adafruit_CircuitPython_MCP4725/
```

```
sudo python3 setup.py install
```

You have now successfully installed the library. In this library are sample codes, which you can use with slight editing. To do this, execute the following commands.

```
cd examples/
```

```
sudo nano mcp4725_simpletest.py
```

Now add the I2C address in line 16:

```python
# Initialize I2C bus.
i2c = busio.I2C(board.SCL, board.SDA)

# Initialize MCP4725.
dac = adafruit_mcp4725.MCP4725(i2c,address=0x60)
```

Please note that if you have changed the I2C address before, you have to edit line 16 accordingly:

```python
# Initialize I2C bus.
i2c = busio.I2C(board.SCL, board.SDA)

# Initialize MCP4725.
dac = adafruit_mcp4725.MCP4725(i2c,address=0x61)
```
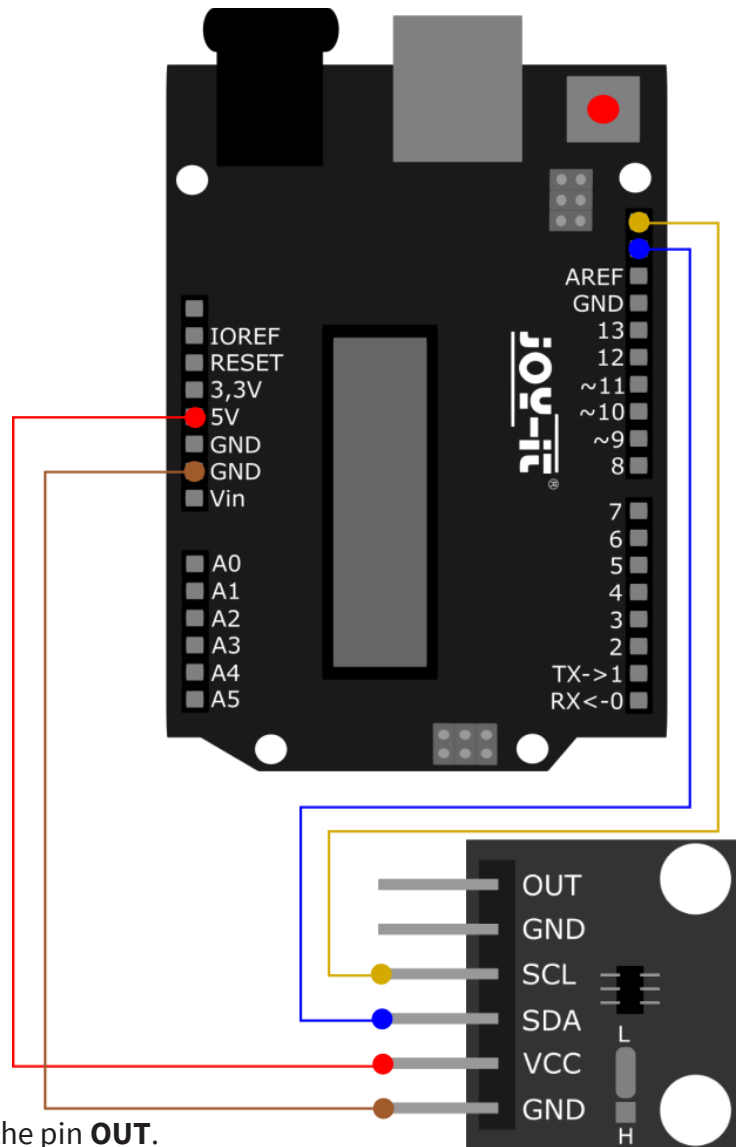
Now, close the file with **CTRL + O** and **CTRL + X**. You can now run the sample code with the following command.

```
python3 mcp4725_simpletest.py
```

4.1 Connection

COM-DAC01	Arduino
OUT	-
GND	-
SCL	A4
SDA	A5
VCC	5 V
GND	GND

The analog output of the converter is at the pin **OUT**.

4.2 Code example

For this converter, we use the **Adafruit_MCP4725** library from **Adafruit**, which was released under the _BSD license_ . You can find and install this in your Arduino IDE under **Sketch → Include Library → Manage Librari-es...** . After installation, you can find the **sinewave** example file under **File → Examples → Adafruit MCP4725**. However, before you can run it, you have to adjust the I2C address in line 181.

```
void setup(void) {

  Serial.begin(9600);

  Serial.println("Hello!");

  // For Adafruit MCP4725A1 the address is 0x62 (default) or 0x63 (ADDR pin tied to VCC)

  // For MCP4725A0 the address is 0x60 or 0x61

  // For MCP4725A2 the address is 0x64 or 0x65

  dac.begin(0x60);

  Serial.println("Generating a sine wave");

}
```

Now, you can run your program by clicking the **Upload** button. However, before doing so, make sure that the **Port** and **Board** are correctly selected under *Tools*.

5. ADDITIONAL INFORMATION

Our information and take-back obligations according to the Electrical and Electronic Equipment Act (ElektroG)

Symbol on electrical and electronic equipment:

This crossed-out dustbin means that electrical and electronic appliances do 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 device (which essentially fulfils the same function as the new device purchased from us) free of charge for disposal when you purchase a new device.
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:
SIMAC Electronics GmbH, Pascalstr. 8, D-47506 Neukirchen-Vluyn, Germany

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 email at 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

If there are still any issues pending or problems arising after your purchase, we will support you by e-mail, telephone and with our ticket support system.

Email: **service@joy-it.net**
Ticket system: http://support.joy-it.net
Telephone: +49 (0)2845 9360-50 (10-17 o'clock)

For further information please visit our website:
www.joy-it.net