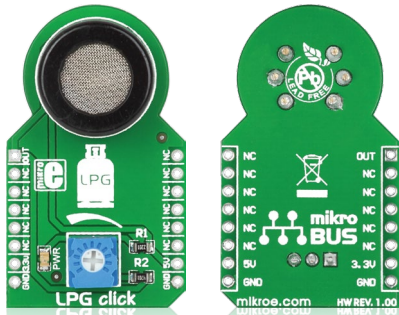# LPG click™

1. Introduction

LPG click™ is a simple solution for adding a high-sensitivity sensor for detecting liquefied petroleum gas leakage. The board features an **MQ-5** sensor with a SnO$_2$ gas sensing layer, a calibration potentiometer, a **mikroBUS™** host socket, two jumpers and a power indicator LED. LPG click™ communicates with the target board through mikroBUS™ AN (OUT) line. LPG click™ is designed to use a 5V power supply only.
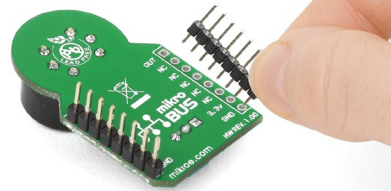
2. Soldering the headers

Before using your click™ board, make sure to solder 1x8 male headers to both left and right side of the board. Two 1x8 male headers are included with the board in the package.
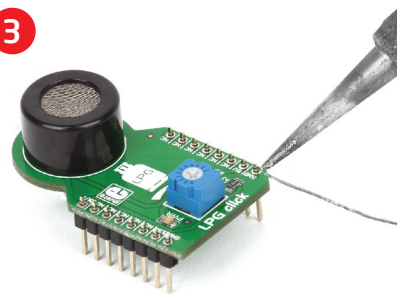
Turn the board upside down so that the bottom side is facing you upwards. Place shorter pins of the header into the appropriate soldering pads.

Turn the board upward again. Make sure to align the headers so that they are perpendicular to the board, then solder the pins carefully.

3. Plugging the board in

Once you have soldered the headers your board is ready to be placed into the desired mikroBUS™ socket. Make sure to align the cut in the lower-right part of the board with the markings on the silkscreen at the mikroBUS™ socket. If all the pins are aligned correctly, push the board all the way into the socket.
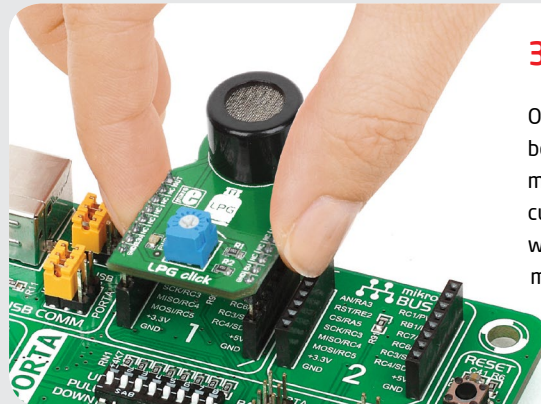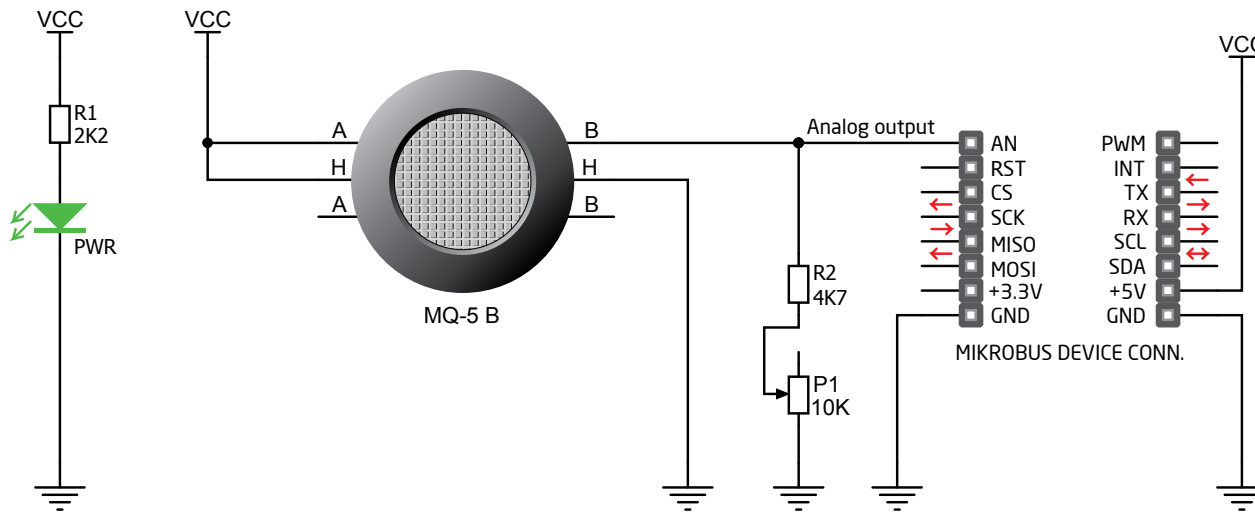
4. Essential features

LPG click™ can detect liquefied petroleum gas levels in concentrations from 200 to 10000 ppm. The MQ-5 LPG sensor unit has a sensor layer made of Tin dioxide (SnO$_2$), an inorganic compound which has lower conductivity in clean air. The conductivity increases as the levels of LPG rise. LPG click™ also contains a potentiometer that lets you adjust the sensor for the environment. For precise calibration the sensor needs to preheat (once powered up, it takes 24h to reach the right temperature).

click™ BOARD

www.mikroe.com

5. LPG click™ board schematic
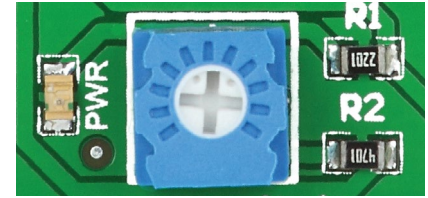

VCC

VCC

R1
2K2

PWR

A
H
A

MQ-5 B

B
H
B

Analog output

R2
4K7

P1
10K

MIKROBUS DEVICE CONN.

AN	PWM
RST	INT
CS	TX
SCK	RX
MISO	SCL
MOSI	SDA
+3.3V	+5V
GND	GND

VCC

6. Calibration potentiometer

To calibrate LPG click™ for optimum performance, use the on-board potentiometer to adjust the Load Resistance of the sensor circuit.

7. Code examples

Once you have done all the necessary preparations, it's time to get your click™ board up and running. We have provided examples for mikroC™, mikroBasic™ and mikroPascal™ compilers on our **Libstock** website. Just download them and you are ready to start.

LIBSTOCK.com

8. Support

MikroElektronika offers **free tech support (www.mikroe.com/support)** until the end of the product's lifetime, so if something goes wrong, we're ready and willing to help!

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