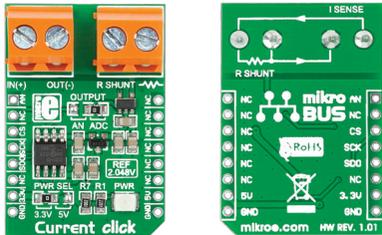


Current click™

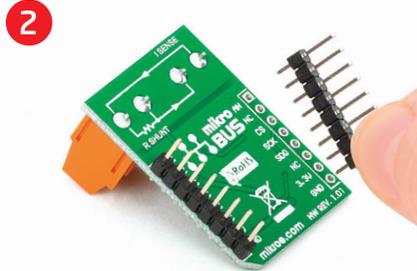
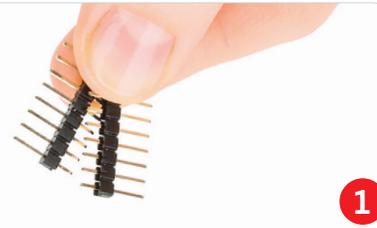
1. Introduction



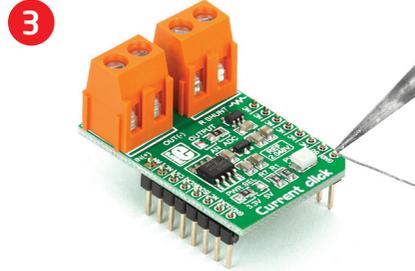
Current Click™ is an add-on board in **mikroBUS™** form factor. It's a compact and easy solution for adding current measurement in your design. It features **INA196** current shunt monitor, **MCP3201** 12-bit ADC, **MAX6106** voltage reference as well as two screw terminals. Current Click™ communicates with target board microcontroller via **mikroBUS™** SPI (SDO, SCK, CS) and AN lines. The board is designed to use either 3.3V or 5V power supply. LED diode indicates the presence of power supply.

2. Soldering the headers

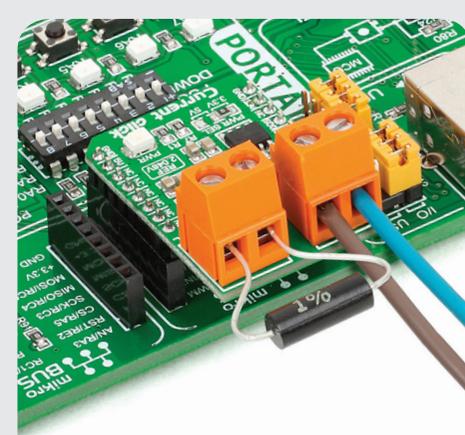
Before using your click board™, make sure to solder 1x8 male headers to both left and right side of the board. Two 1x8 male headers are included with the board in the package.



Turn the board upside down so that bottom side is facing you upwards. Place shorter parts of the header pins in both soldering pad locations.

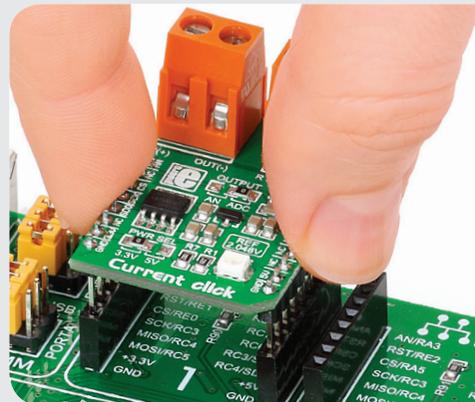


Turn the board upward again. Make sure to align the headers so that they are perpendicular to the board, then solder the pins carefully.



4. Essential features

Current Click™ board serves as the current measurement device. It receives current from output circuit connected to IN(+) and OUT(-) pins of the first screw terminal and via **INA196** IC converts it into a voltage value. Second screw terminal is used for external shunt. In order to measure values of current in various bands, you need to screw-on the shunt with appropriate value. Four shunts with different values are provided in the package.



3. Plugging the board in

Once you have soldered the headers your board is ready to be placed into 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 of the pins are aligned correctly, push the board all the way into the socket.

click™
BOARD
www.mikroe.com

Current click Manual
ver. 1.01



0 100000 023518

5. Current Click™ Board Schematic

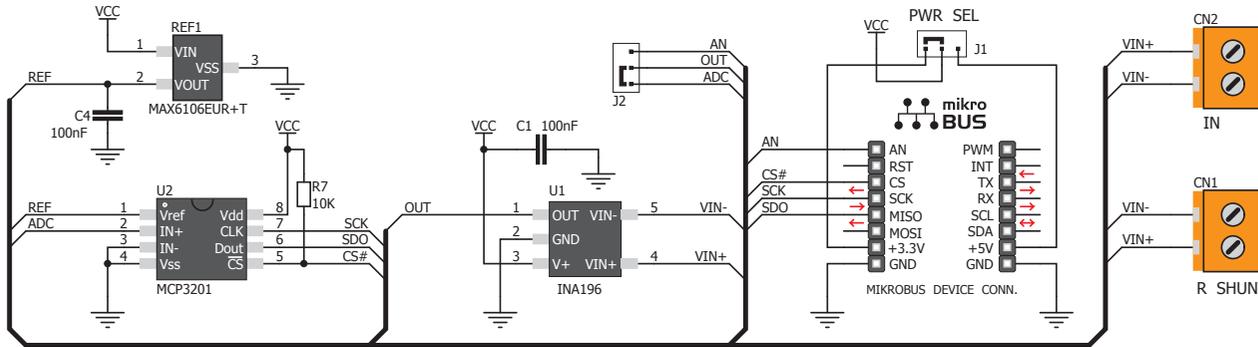
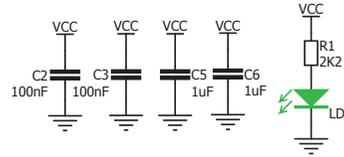
	$R_{shunt}[\Omega]$	$I_{min} [mA]$	$I_{max} [mA]^*$
1	0.05	400	2048
2	0.2	100	512
3	1	20	102
4	10	2	10

R_{shunt} - The values of shunt resistor which are provided in the package

I_{min} - The values of minimal current where the range is linear

I_{max} - The values of maximal current that can be measured

* The measured values can vary because of the screw terminal resistance ($\approx 0.0035\Omega$) and shunt resistors tolerance ($\pm 1\%$)



6. SMD Jumpers

The current Click™ board communicates with the main board microcontroller via SPI interface (using ADC) or via AN line (directly connected to the microcontroller AN pin) depending on the position of the **J1** SMD jumper. This jumper is soldered in ADC position. There is one zero-ohm SMD jumper **J1** used to select whether 3.3V or 5V power supply is used. Jumper **J1** is soldered in 3.3V position by default.

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 the examples for mikroC, mikroBasic and mikroPascal compilers on our **Libstock** website. Just download them and you are ready to start.



8. Support

MikroElektronika offers **Free Tech Support** (www.mikroe.com/esupport) until the end of product lifetime, so if something goes wrong, we are ready and willing to help!