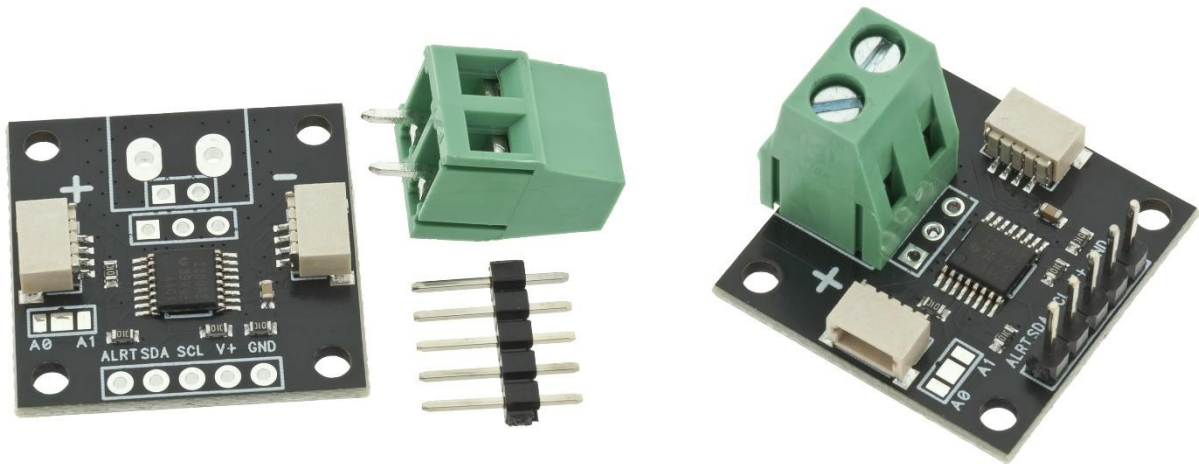


# Current & Voltage sensor 0-36V $\pm 15A$

Part.no. 41032577



Breakout board with QWIIC connectors for the versatile voltage and current sensor INA260. This sensor is able to measure current (I), voltage (V) and calculate consumed power (W) with very high accuracy. The sensor can measure both positive and negative current flow using either high- or low-side sensing. The integrated shunt resistor has a tolerance equivalent of 0.1% and an extremely low burden voltage thanks to the 2 mOhm resistance.

The module provides access to all pins from the sensor, including I2C interface, alert output, address pins and a header to configure high- or low-side voltage measurement. I2C access is provided through two JST-SH QWIIC connectors for easy wiring. The current sensing path has wide tracks to minimize PCB resistance and patterns for either a 5.08mm pitch screw terminal, 2.54mm pin header or soldering wires directly to the board.

Two solder jumpers provides access to the two address pins (A0 and A1). Simply short either or both pins to change the I2C address. Up to four devices can be wired to the same I2C bus.

## Included parts:

- 1x 5.08 mm screw terminal
  - 1x 2.54 mm header
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## Functions

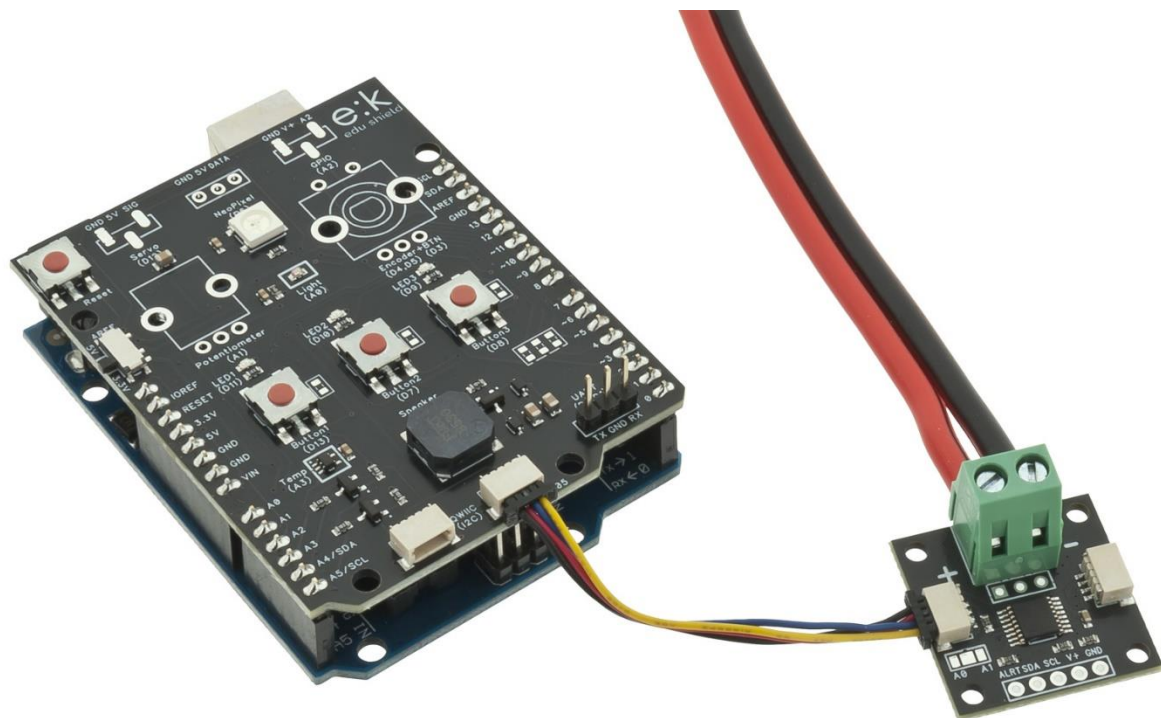
- Bidirectional current and voltage measurement
- Calculates power consumption
- High- or low-side sensing
- Alert output for over-current detection
- QWIIIC connectors

## Specifications

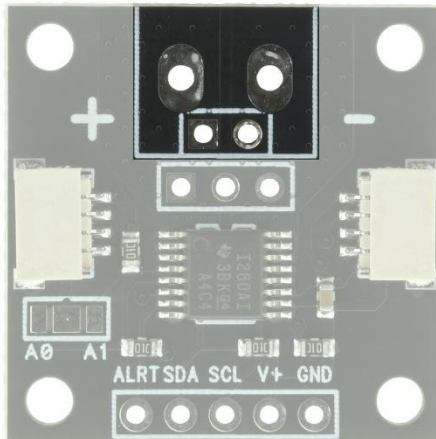
- Supply voltage: 2.7 - 5.5 VDC
- Bus voltage: 0 - 36 V
- Current range: -15 - +15 A
- Measuring resistance: 2 mOhm
- Accuracy: 0.15% gain error, 5 mA offset, 10 ppm/°C
- Mounting holes:  $\varnothing 2.5$  mm / 20 x 20 mm
- Dimensions: 25 x 25 mm

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## Connections



Current sense:

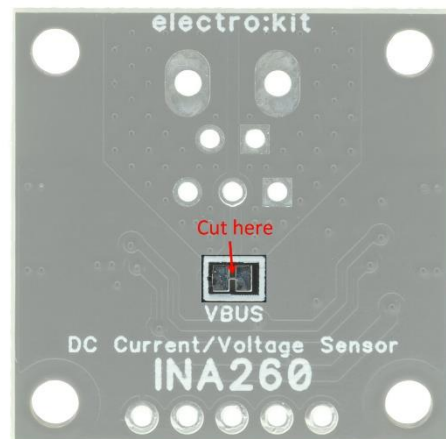
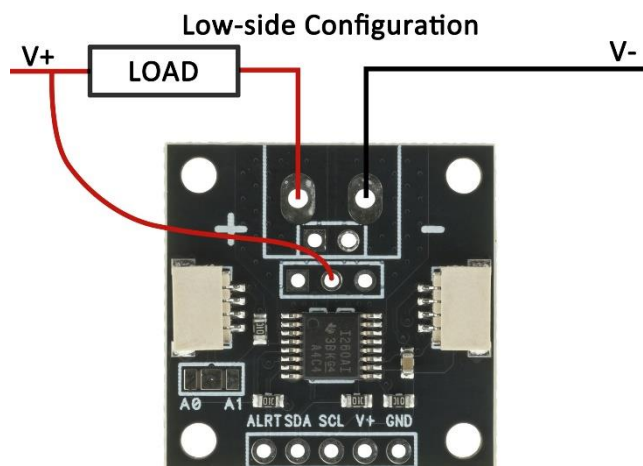


Two sets of holes are available for connecting wires, pin headers or screw terminals to the board. The larger holes will fit the included 5.08mm screw terminal and the smaller a regular 2.54mm pitch header.

For a lower resistance connection, wires can be soldered directly to the board.

Please note that because of the high current capability, the pads are connected using very wide tracks and can be difficult to solder. Use a high-power soldering iron (at least 60W).

Voltage sense jumper:

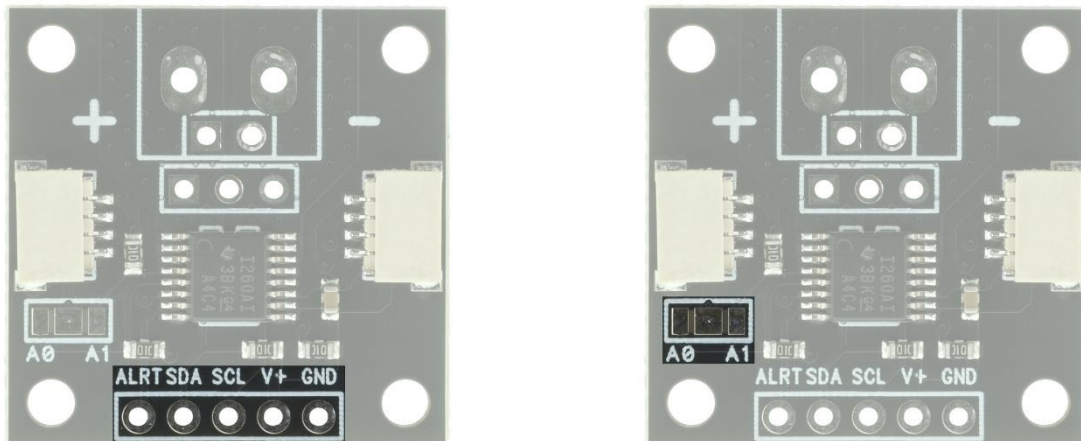


The board is pre-wired for high-side measurement, ie. measuring between V+ and the load. This is the most common way to use the INA260 sensor. To measure the bus voltage in this configuration, no additional configuration is required.

To measure the bus voltage in a low-side configuration, the solder jumper on the back must be severed and a wire connected between the center pin of the voltage sense header and the positive terminal of the loads power supply.

When measuring a load powered by a separate, power supply where the ground isn't shared, *both grounds must be connected* to establish a common reference. Simply connect a wire between the negative terminal of the power supply and the GND pin.

Logic interface & I2C address:



Along the bottom side are the logic pins and supply voltage pins exposed.

When using the QWIC connectors to communicate and supply power to the board, these pins can be left unconnected.

Pinout:

Pin	Description
ALRT	Open-drain interrupt pin (external pullup required). Configurable output for over-/under- current- or voltage events. Active low.
SDA	I2C data. 10k pullup to V+.
SCL	I2C clock. 10k pullup to V+. 1 kHz - 2.94 MHz clock speeds supported.
V+	Positive power supply pin for the sensor. 2.7 - 5.5V limit.
GND	Negative power supply pin for the sensor. Not shared with load.

Up to four different boards can be wired up to the same I2C bus by changing the address. The default I2C address is 0x40. To change the address, short either or both A0 and A1 solder jumpers.

A0	A1	I2C Address
open	open	0x40 (default)
open	short	0x41
short	open	0x44
short	short	0x45

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## Datasheet & Example code

- [INA260 Datasheet](#)
  - [Arduino library](#)
  - [Arduino library reference](#)
  - [Python library](#)
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## Mechanical dimensions

