Atlas**Scientific**™
Environmental Robotics

V 1.2

Revised 1/25

i2 Inter**Link**

Arduino Shield

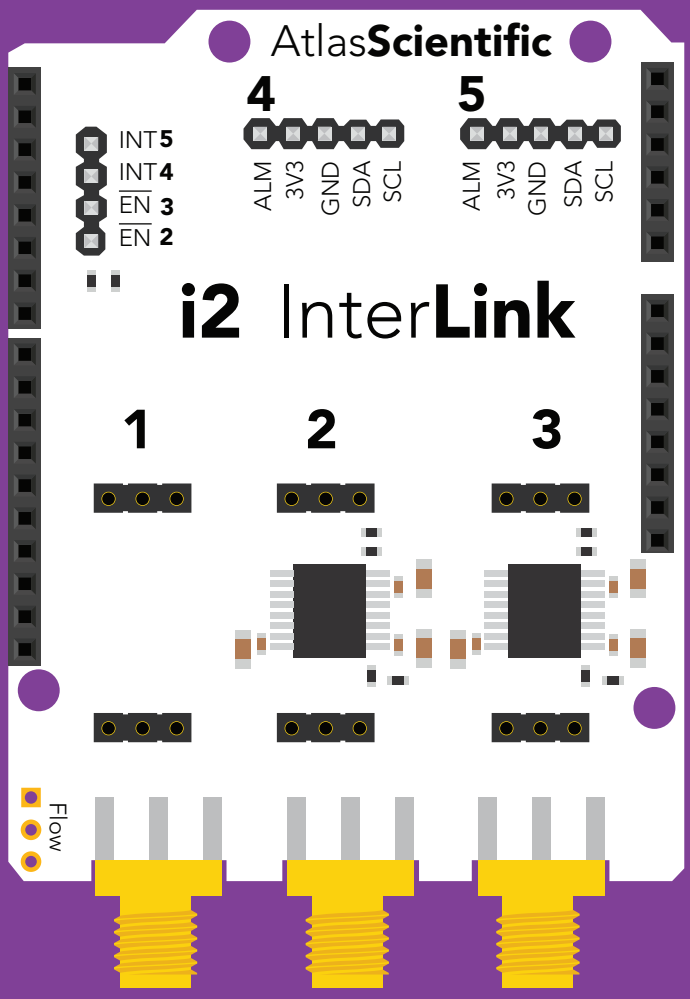
Connect up to five Atlas Scientific sensors to one Arduino Uno / Mega.

All Arduino pins still accessible through the i2 InterLink.

I2C mode only.

Comes fully assembled.

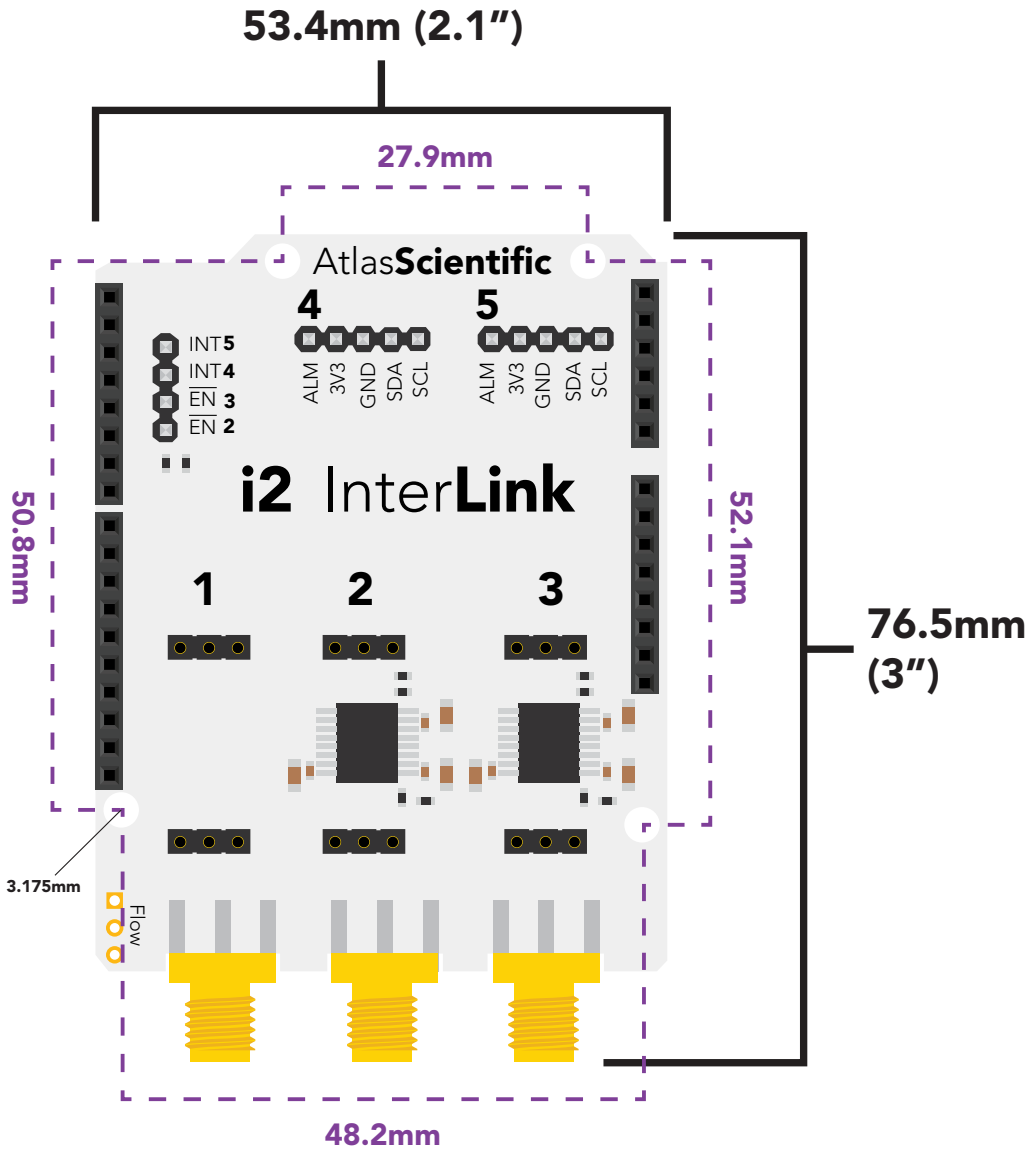
i2 InterLink does not come with any EZO™ circuits or sensors.

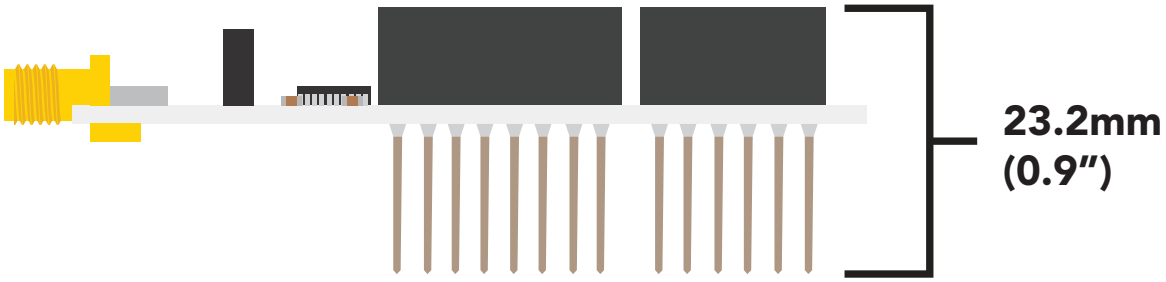


Written by Jordan Press
Designed by Noah Press

This is an evolving document, check back for updates.

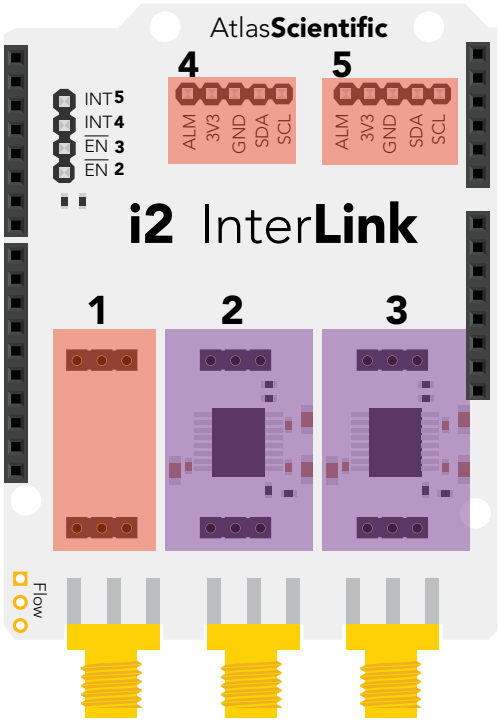
i2 InterLink dimensions





i2 InterLink isolated slots

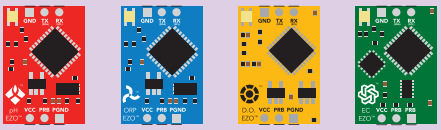
The i2 InterLink has 2x isolated EZO™ ciruit slots, 1x non-isolated EZO™ circuit slot and 2x non-isolated connectors for 5 pin EZO™ data cable sensors/devices.



Isolated

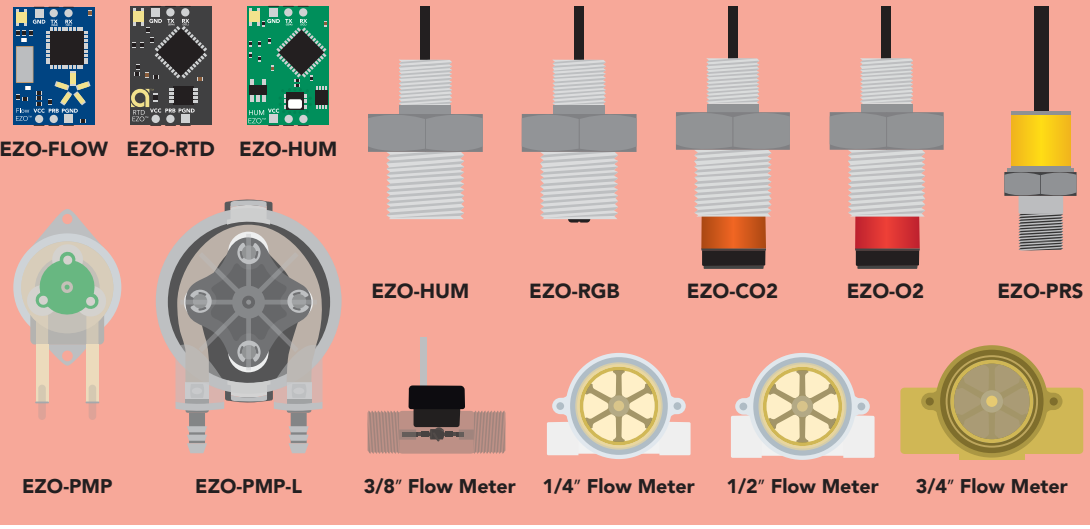
Non-isolated

These devices require electrical isolation



The i2 InterLink does not come with any EZO™ circuits or sensors.

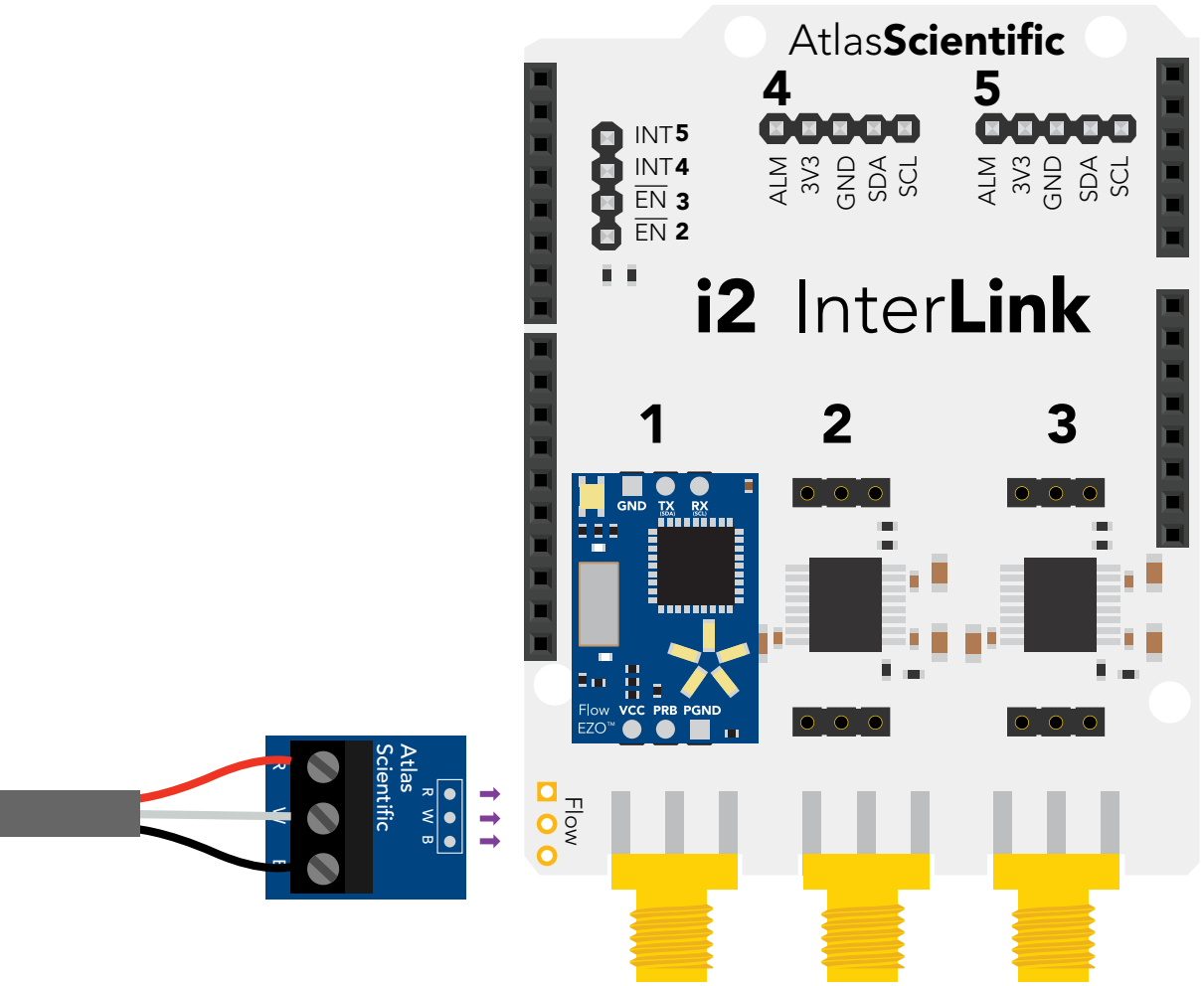
These devices do not require electrical isolation



AtlasScientific™ Environmental Robotics

Connecting a flow meter to the i2 InterLink

The i2 InterLink is fully compatable with the EZO™ Universal Flow Meter Totalizer and our line of flow meters. Make sure to place the Totalizer in the non-isolated slot marked "**1**".

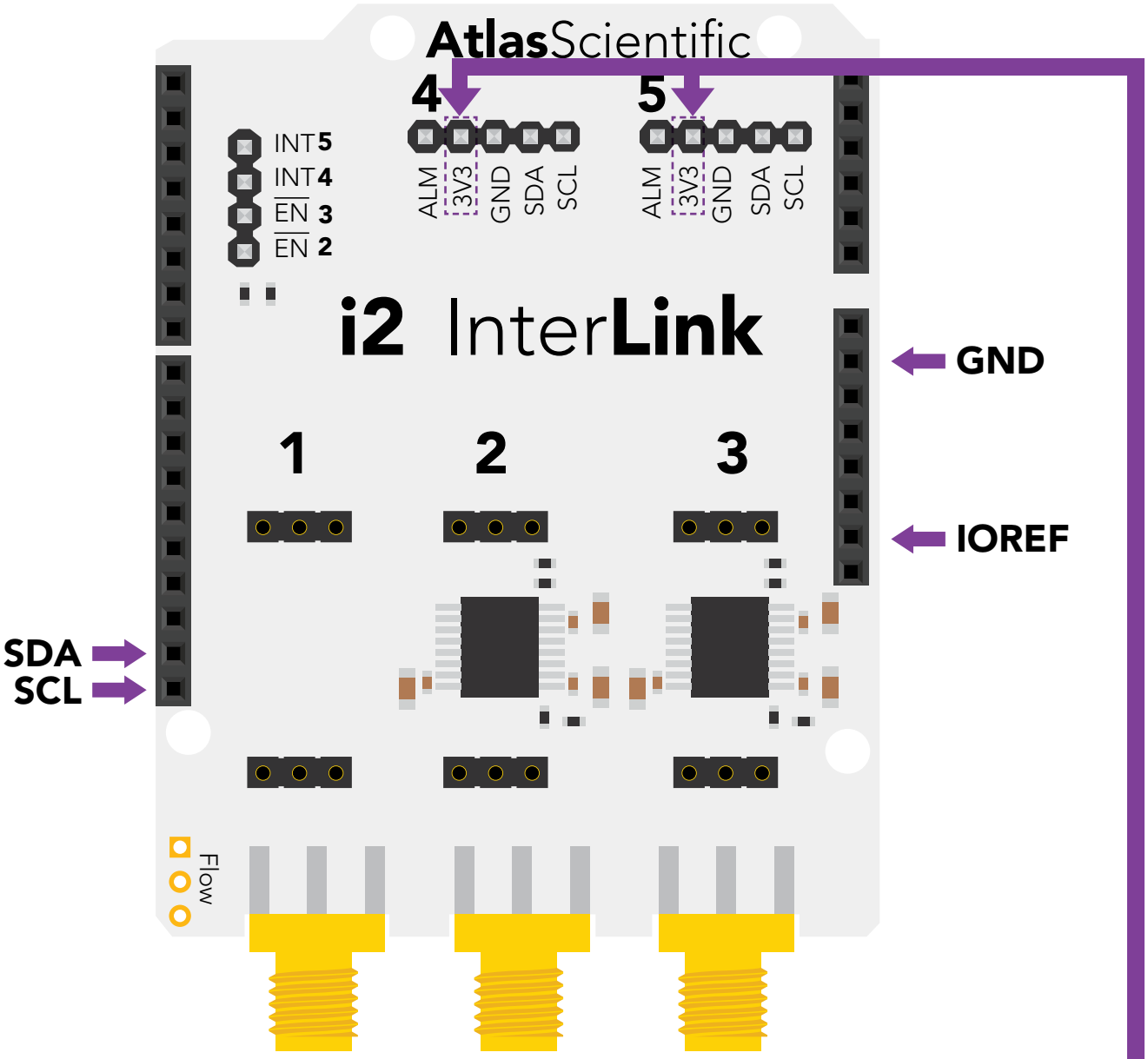


Attach your flow meter to the flow breakout board, then connect the flow breakout board directly to the i2 InterLink via the flow port.

Arduino pins

The i2 InterLink uses these Arduino pins

SCL
SDA
GND
IOREF



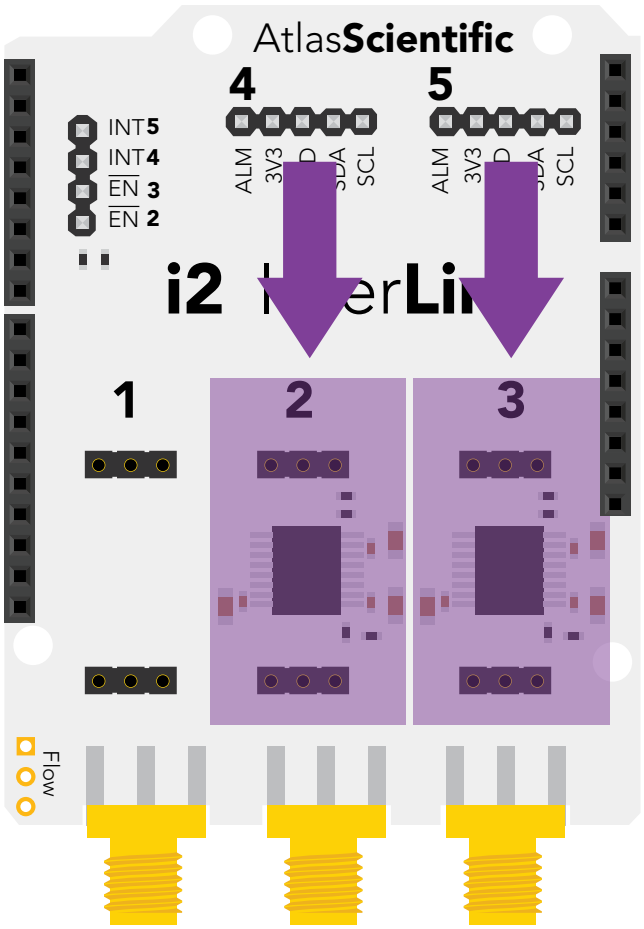
The i2 InterLink board's voltage is supplied from the **IOREF** pin on the Arduino, depending on the Arduino type you are using, this voltage could be either **3.3 volts** or **5 volts**.

All Arduino pins (*including the ones used by i2 InterLink)* are still available to you.

Current consumption

The baseline current consumption for the i2 InterLink shield is 56 mA. This is because each isolated channel consumes 28 mA continuously. Adding an EZO circuit to an isolated channel will increase the current consumption.

The table below shows how much current will be consumed when an EZO™ circuit is connected.



Channel 1 = 0mA
Channel 2 = 28mA
Channel 3 = 28mA
Channel 4 = 0mA
Channel 5 = 0mA

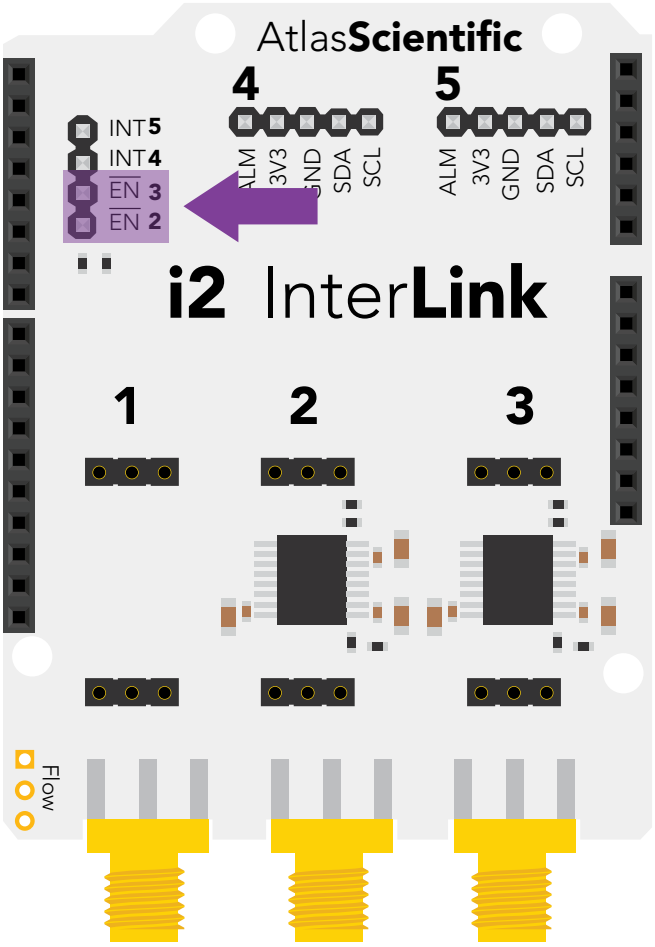
Isolated Channels 2 & 3

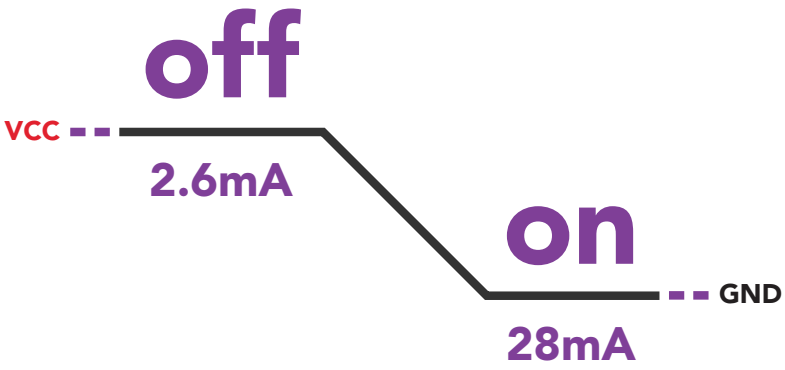
No Load	28mA
EZO™ pH	44mA
EZO™ ORP	44mA
EZO™ Dissolved Oxygen	44mA
EZO™ Conductivity	55mA

Reducing current consumption

The electrical isolation circuity on channels 2 and 3 can be disabled using the EN2 and EN3 pins. Pulling EN2 or EN3 high will shut off the isolated channel, along with the connected EZO™ circuit. Current consumption will drop to 2.6mA.

If EN2 or EN3 are not used, simply leave unconnected.





Using INT 4 and INT 5 pins

Connect INT 4 and INT 5 to an interrupt pin of your choosing to detect that an alarm pin on channel 4 or channel 5 has been triggered. The Alarm function is one of the pinouts from a sensor that connects to channel 4 or channel 5 such as an EZO-CO2™ sensor.