Atlas Scientific™
Environmental Robotics

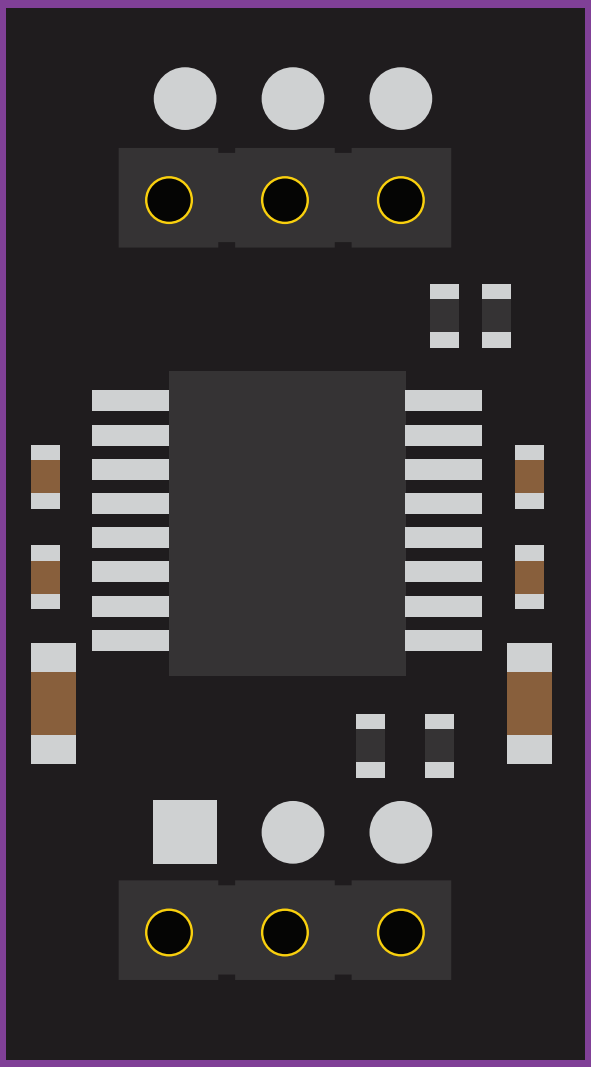
V 1.0

Released 6/24

EZO™ Vertical Isolator

Embedded Voltage Isolator

Output voltage		**3.9V ± .07**
Voltage input		**3.0V – 5.0V**
Current consumption	5V	**15 mA**
	3.3V	**20 mA**

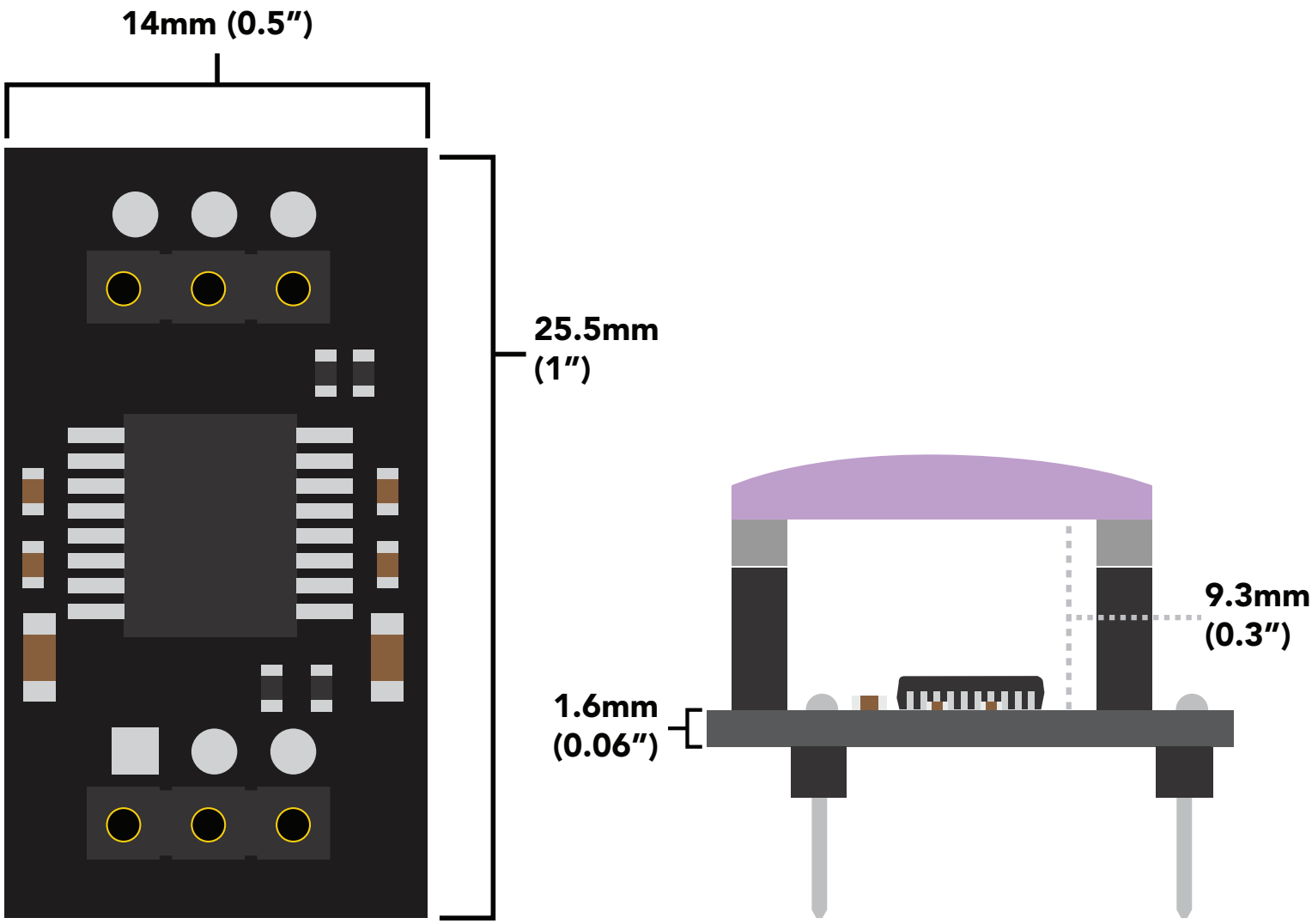


RoHS

Written by Jordan Press
Designed by Noah Press

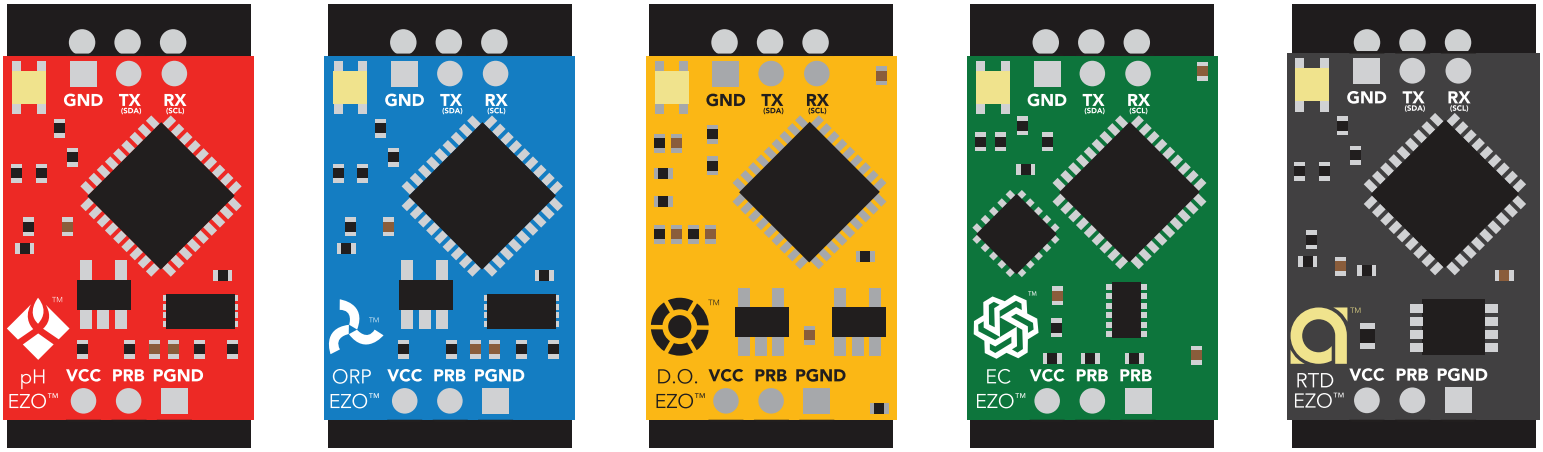
This is an evolving document, check back for updates.

EZO™ circuit dimensions

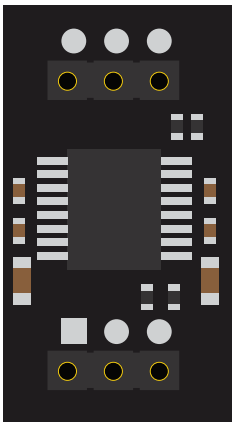


The EZO™ Vertical Isolator works with all EZO™ class devices.

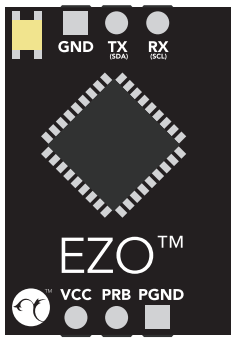
The EZO™ Vertical Isolator does not come with EZO™ class devices.



Current consumption



+



≠ 15 + XmA

i =15mA **i = XmA**

The current consumption for the EZO™ Vertical Isolator is non-linear. The table below shows how much current will be consumed when the EZO™ Vertical Isolator is connected to an EZO™ circuit.

		5V	3.3V
EZO™ Vertical Isolator	+ EZO™ pH	57mA	87mA
	+ EZO™ ORP	58mA	84mA
	+ EZO™ Dissolved oxygen	53mA	84mA
	+ EZO™ Conductivity	82mA	97mA
	+ EZO™ RTD Temperature	59mA	87mA

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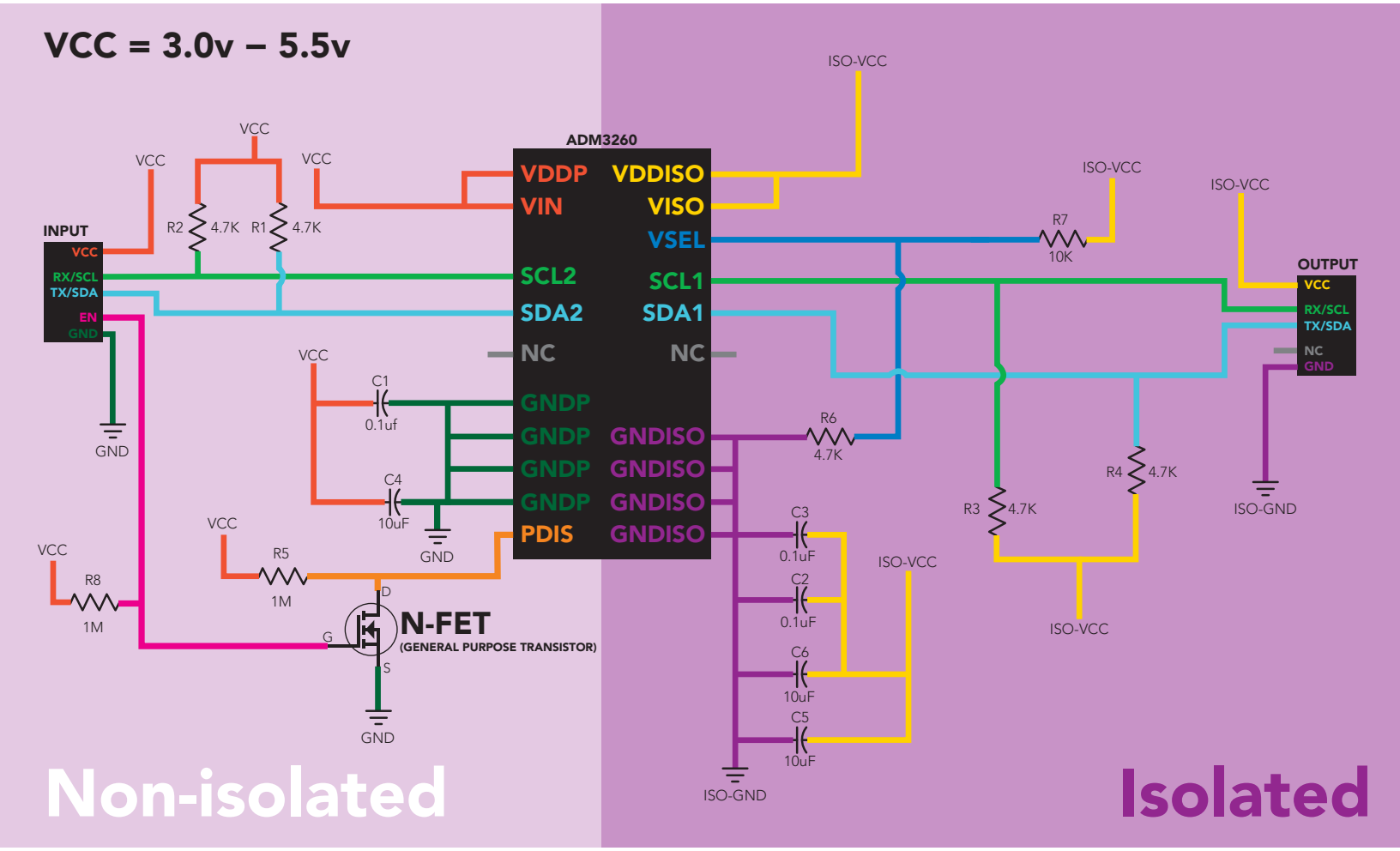
Data isolation

This schematic shows exactly how we isolate data and power using the *ADM3260* and a few passive components. The ADM3260 can output isolated power up to 150 mW and incorporates two bidirectional data channels.

This technology works by using tiny transformers to induce the voltage across an air gap. PCB layout requires special attention for EMI/EMC and RF Control, having proper ground planes and keeping the capacitors as close to the chip as possible are crucial for proper performance. The two data channels have 4.7kΩ pull up resistor on both the isolated and non-isolated lines (R1, R2, R3, and R4) The output voltage is set using a voltage divider (R6 and R7) this produces a voltage of 3.9V regardless of your input voltage.

Isolated ground is different from non-isolated ground, these two lines should not be connected together.



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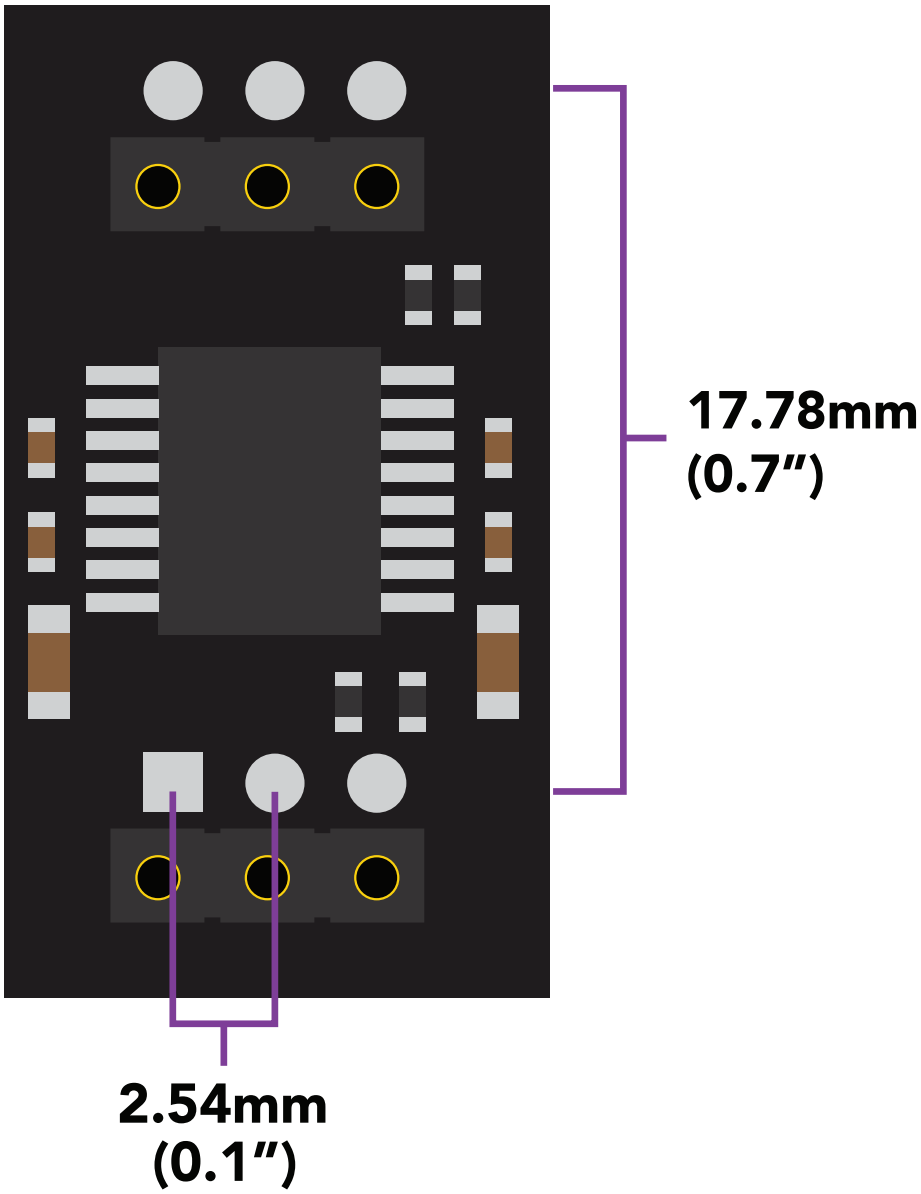
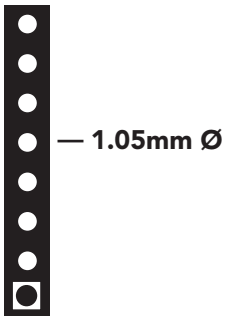
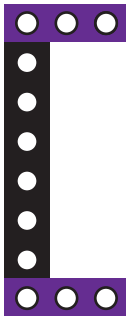
EZO™ circuit footprint



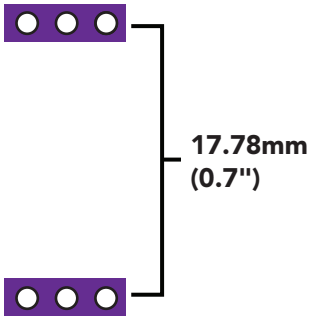
1 In your CAD software place a 8 position header.



2 Place a 3 position header at both top and bottom of the 8 position.



3 Delete the 8 position header. The two 3 position headers are now 17.78mm (0.7”) apart from each other.



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