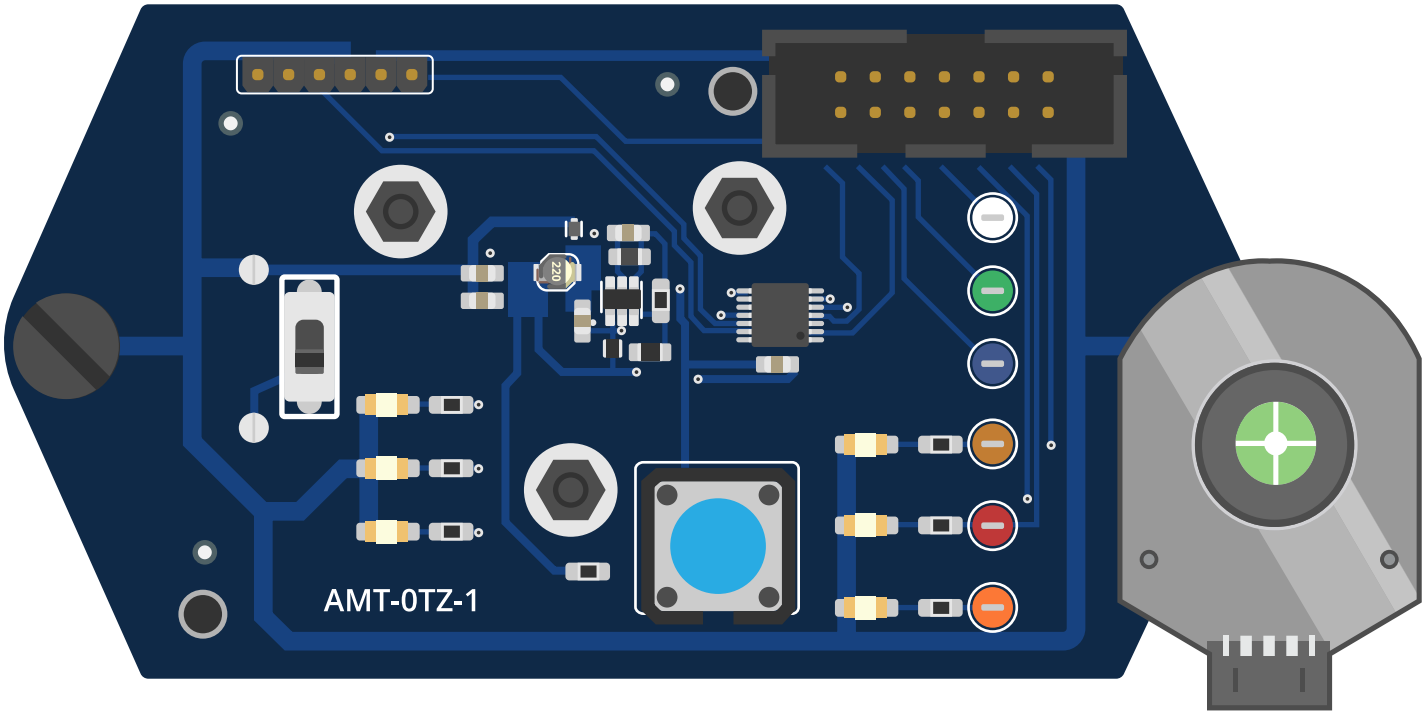
AMT-OTZ-1 User Guide



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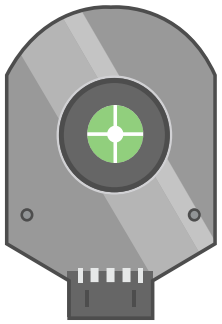
Introduction & Features

The AMT-OTZ-1 One Touch Zero module is a simple and intuitive alignment tool for the AMT31 series commutation encoder. The module allows unprecedented time savings during the encoder alignment process. With the simple press of a button, the AMT31 series encoder can be instantly aligned to a brushless dc (BLDC) motor, eliminating the traditionally time consuming alignment process and removing the need for a motor back-driving fixture and oscilloscope. Because of the compact size of the AMT-OTZ-1 module and its common 9V size battery source, it is perfect for use anywhere, from an engineer's desk to the manufacturing floor.

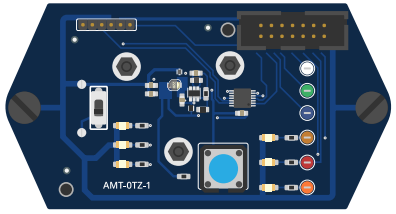
Features:

- Easy "One Touch Zero"
- A/B/Z/U/V/W test points
- LEDs indicating status of each commutation signal
- Universal 9 V battery source
- ON/OFF switch for power saving
- Small handheld size

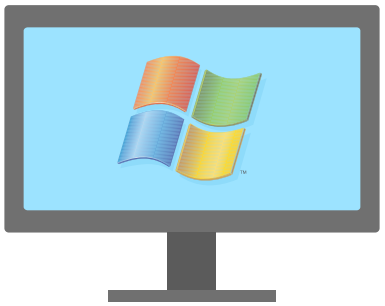
What You'll Need



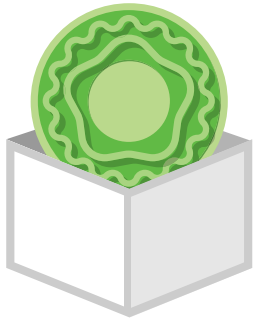
AMT31 Encoder



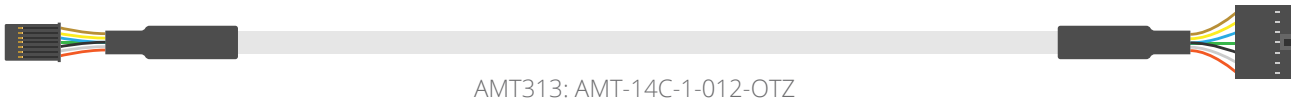
AMT One Touch Zero



A Windows PC
(Vista or newer OS required)
(optional)



AMT Viewpoint™ GUI
(optional)

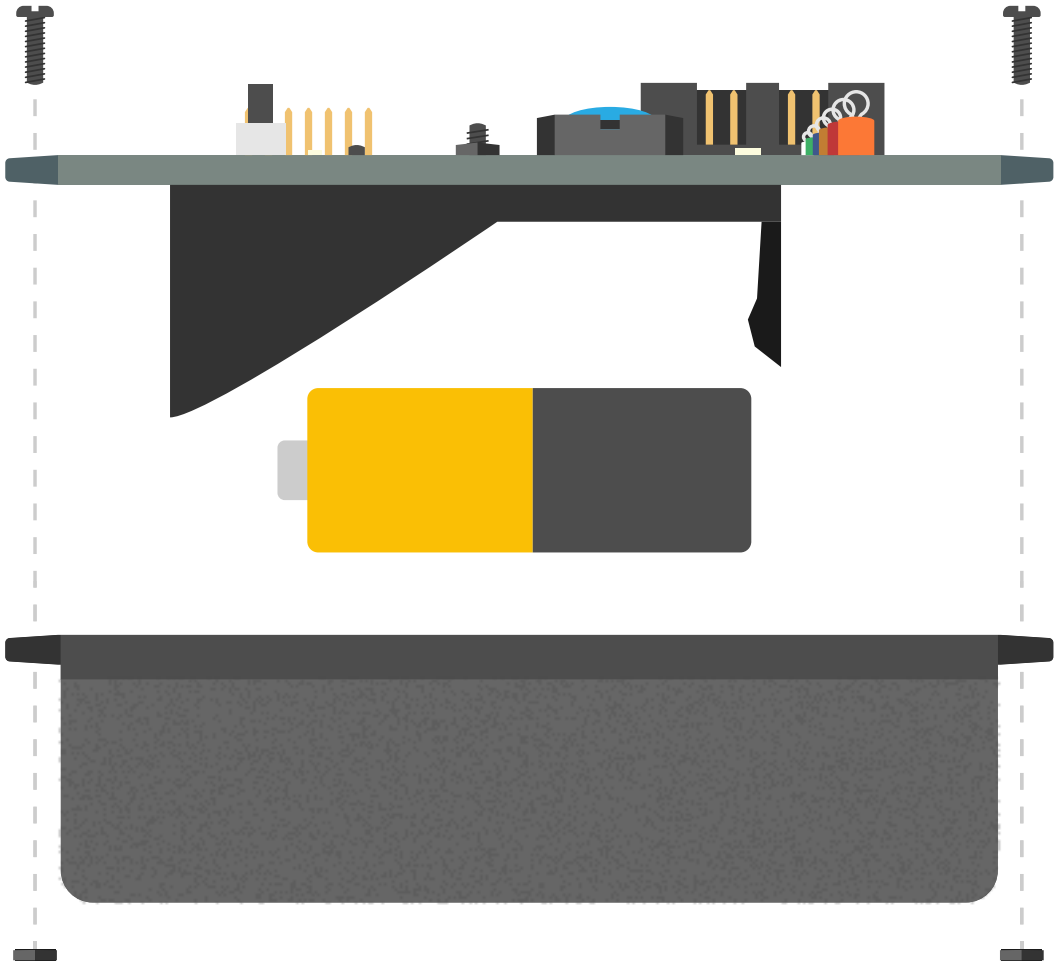


AMT313: AMT-14C-1-012-OTZ

AMT312: AMT-17C-1-012-OTZ

1 Universal 9 V Battery
(not included)

Components & Assembly



AMT-OTZ-1 Includes:

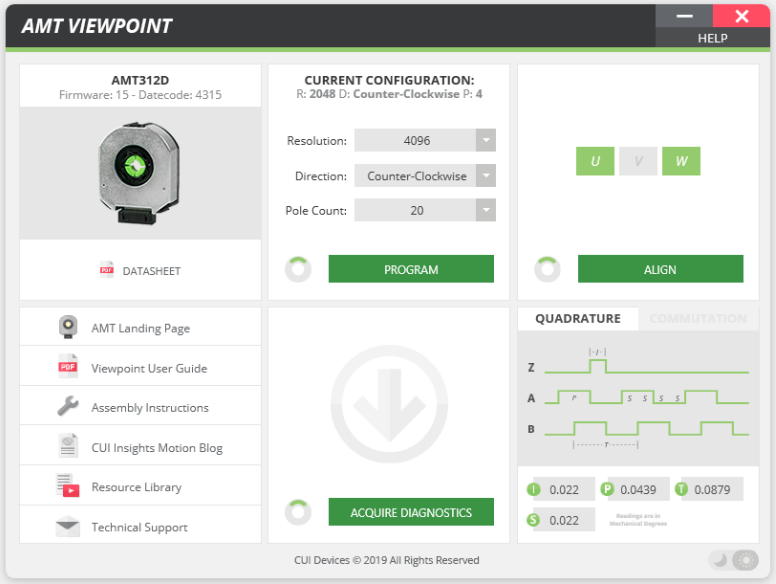
- AMT One Touch Zero Board
- AMT One Touch Zero Base
- 2 Screws and Nuts
- AMT Cable

Assembly:

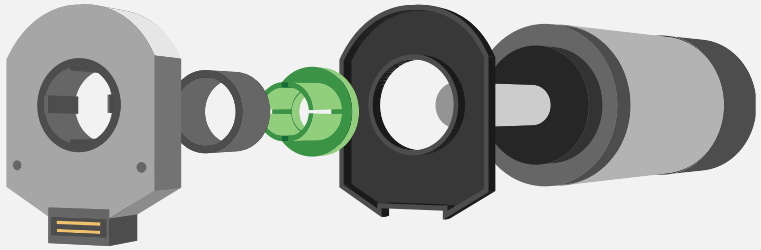
1. Attach 9 V battery to the board
2. Place board on top of base
3. Fasten the board and base together with the two screws and nuts provided

Zeroing Procedure

1. **Optional:** Program AMT31 series commutation encoder with correct resolution, pole configuration, and direction settings using AMT Viewpoint™.

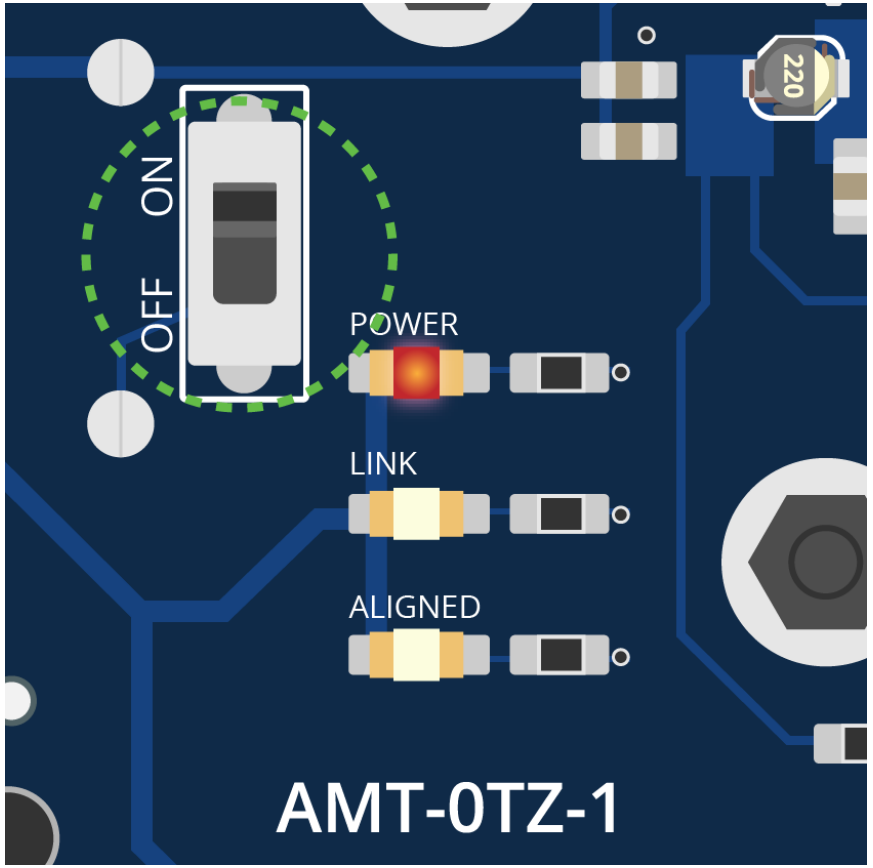


2. Mount the encoder to your motor using all tools provided with the AMT31-V kit. Watch the assembly video for step-by-step directions.

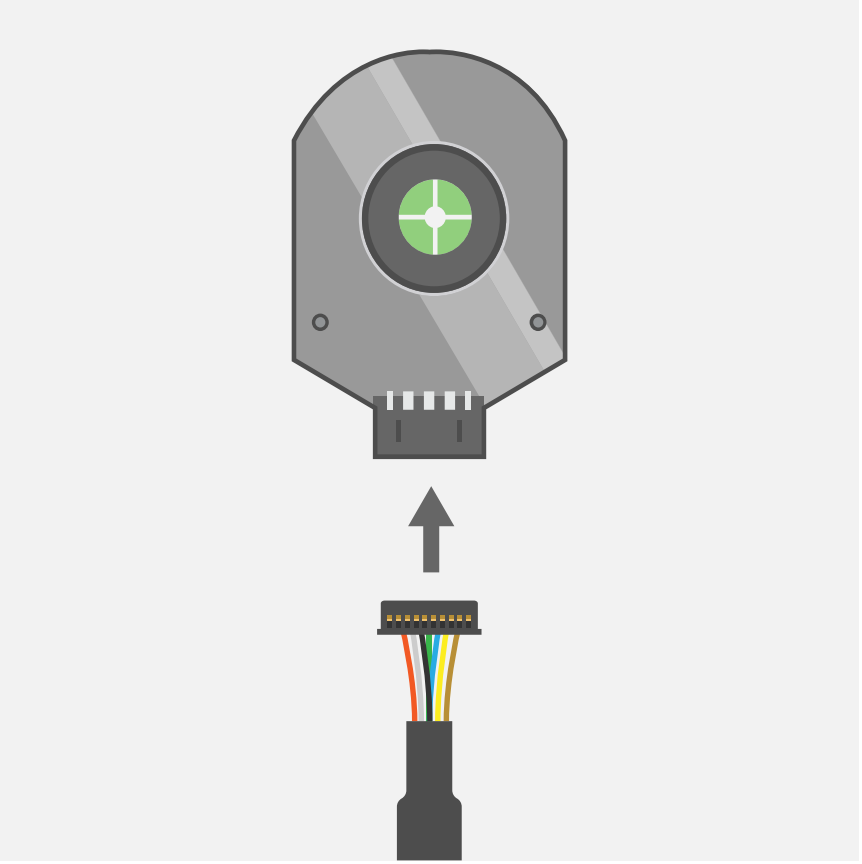


Zeroing Procedure

3 Turn on the AMT-OTZ-1 module.



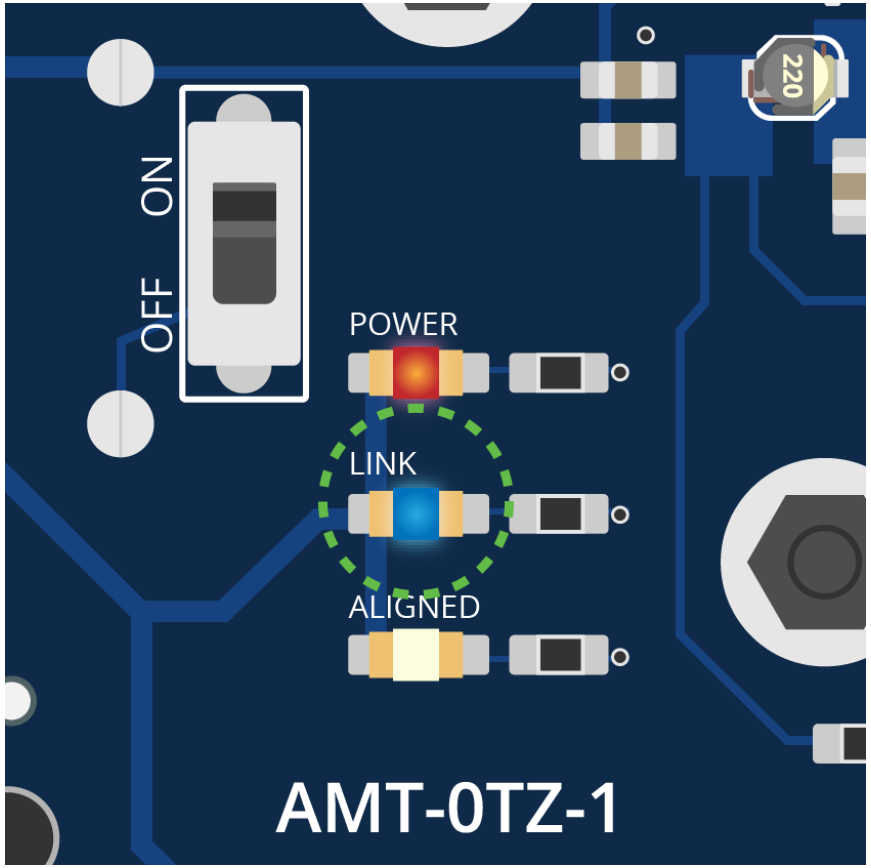
4 Connect AMT31 encoder.



Zeroing Procedure

5 The LINK LED will be illuminated if properly connected.

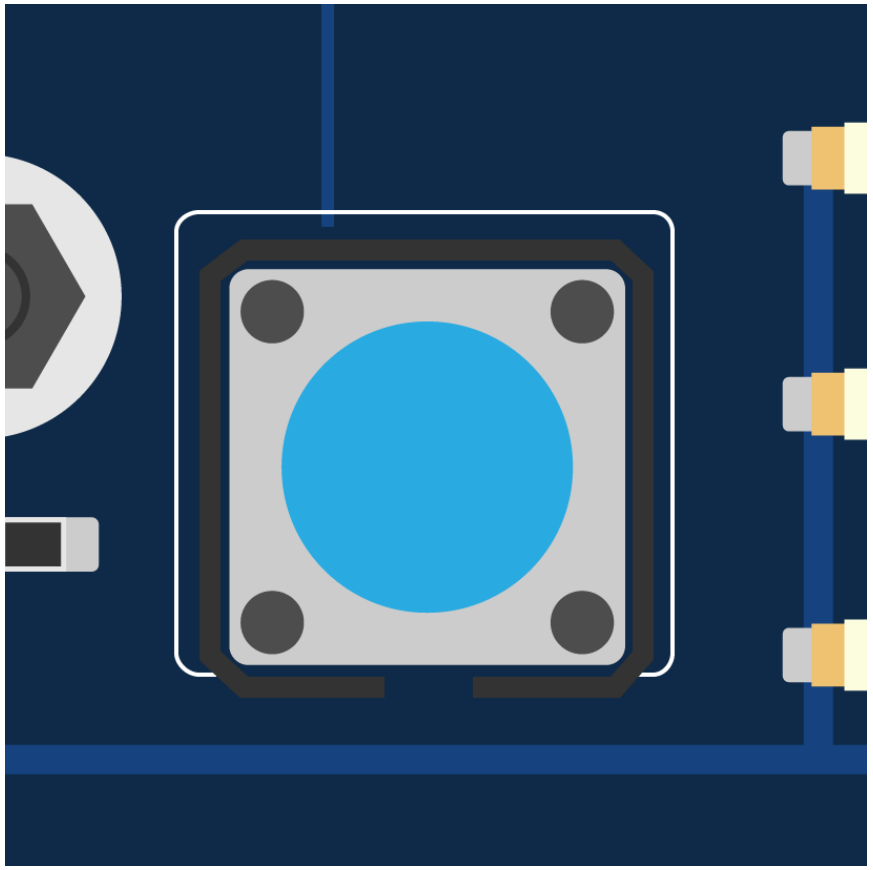
6 Energize or lock the motor windings into place where the encoder's U channel should have its rising edge. Once aligned this will be the zero position. Contact the motor manufacturer for additional information on commutation phase and timing diagrams.

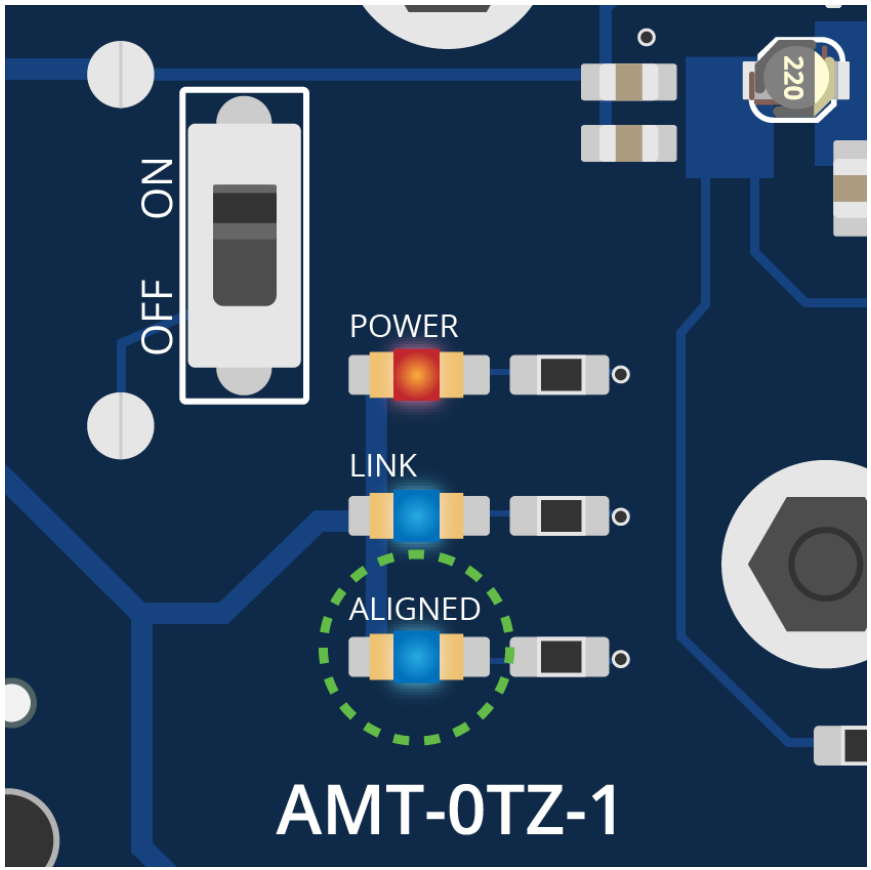


Zeroing Procedure

7 Press the button to align the encoder to the motor.

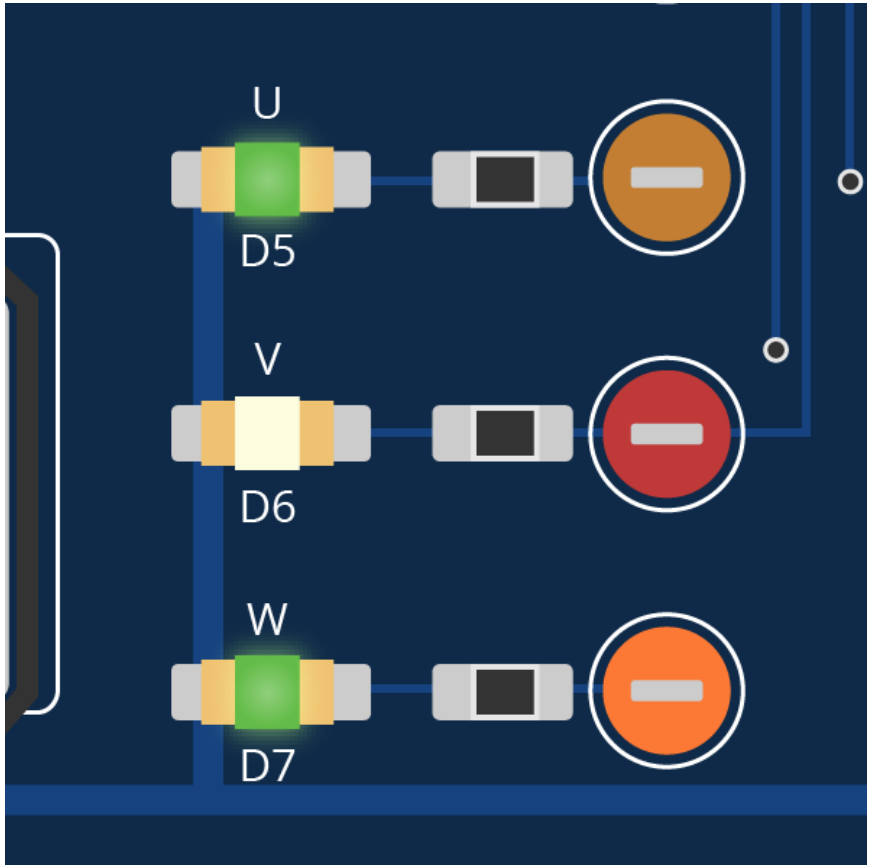
8 The ALIGNED LED will turn on briefly, and then flash three times to signify that alignment was a success.



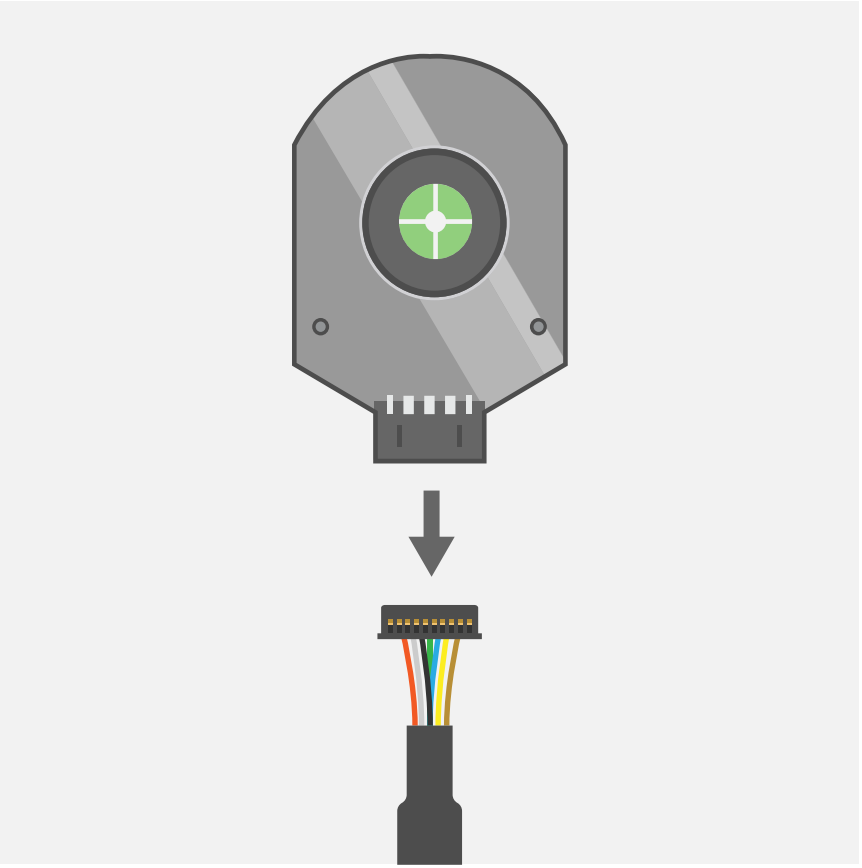


Zeroing Procedure

9 Green LEDs near the test points will indicate the commutation signals are now positioned at the rising edge of the 'U' channel.



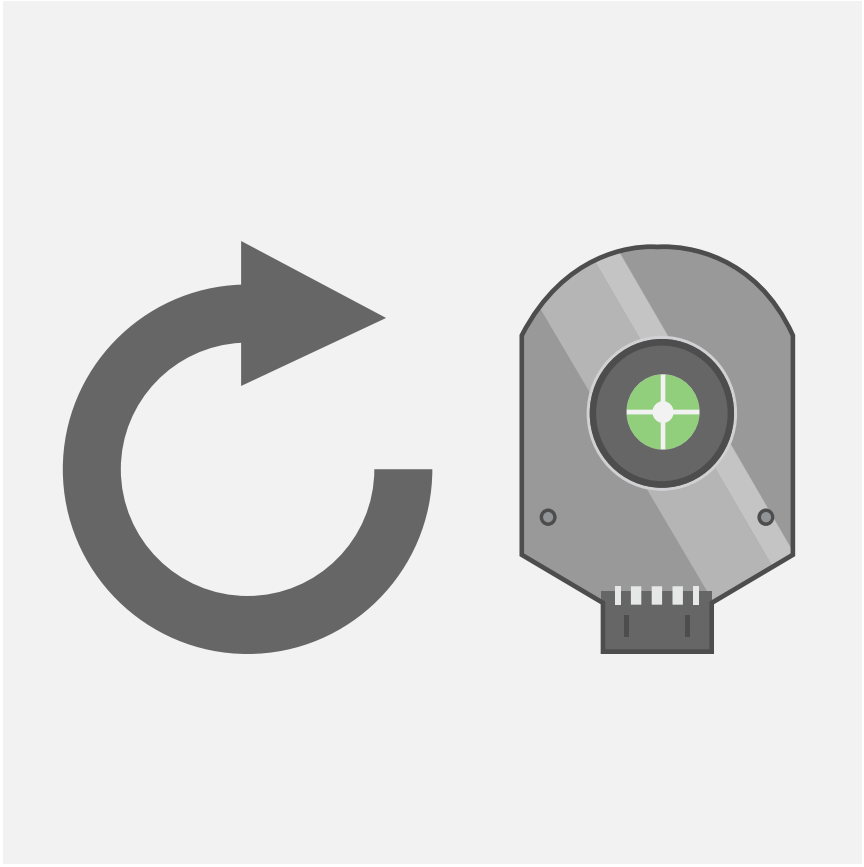
10 Disconnect the cable from the encoder and unlock the motor's windings.

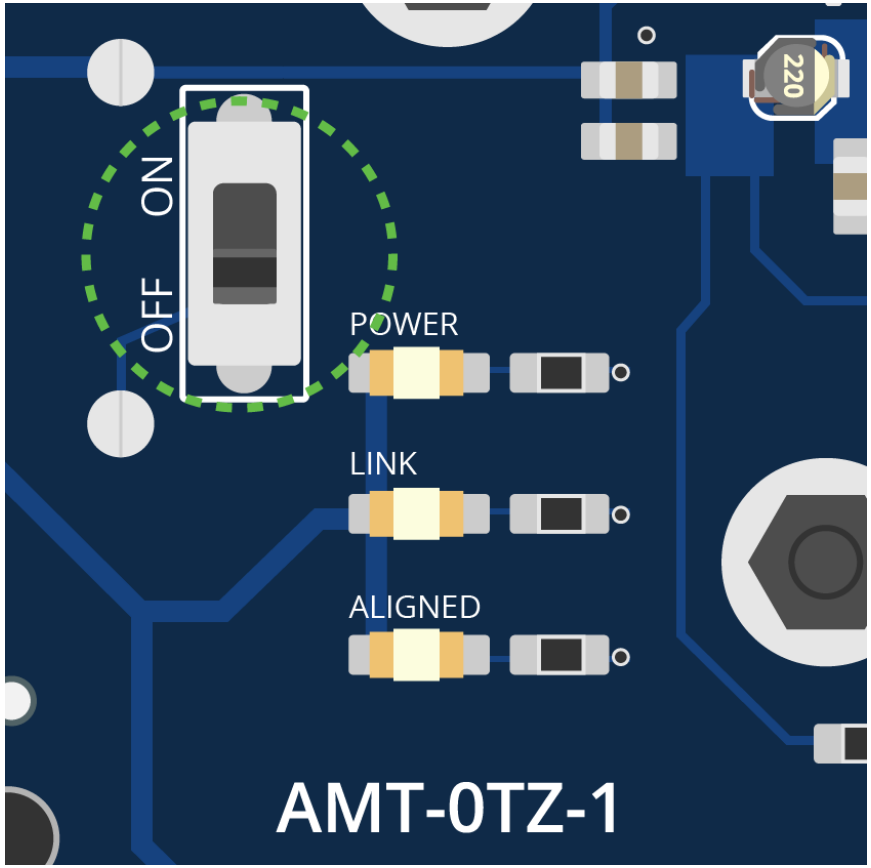


Zeroing Procedure

11 Repeat steps 1-9 for all other encoders requiring alignment.

12 Be sure to turn the AMT-OTZ-1 module off after usage to preserve battery life.

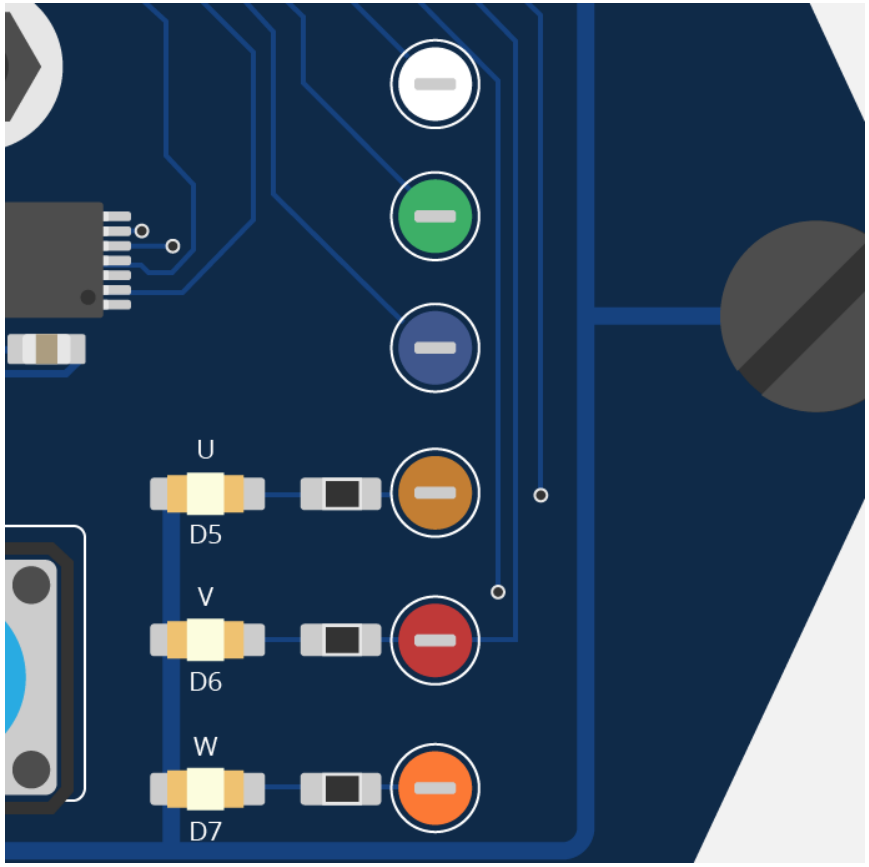




Using Test Points

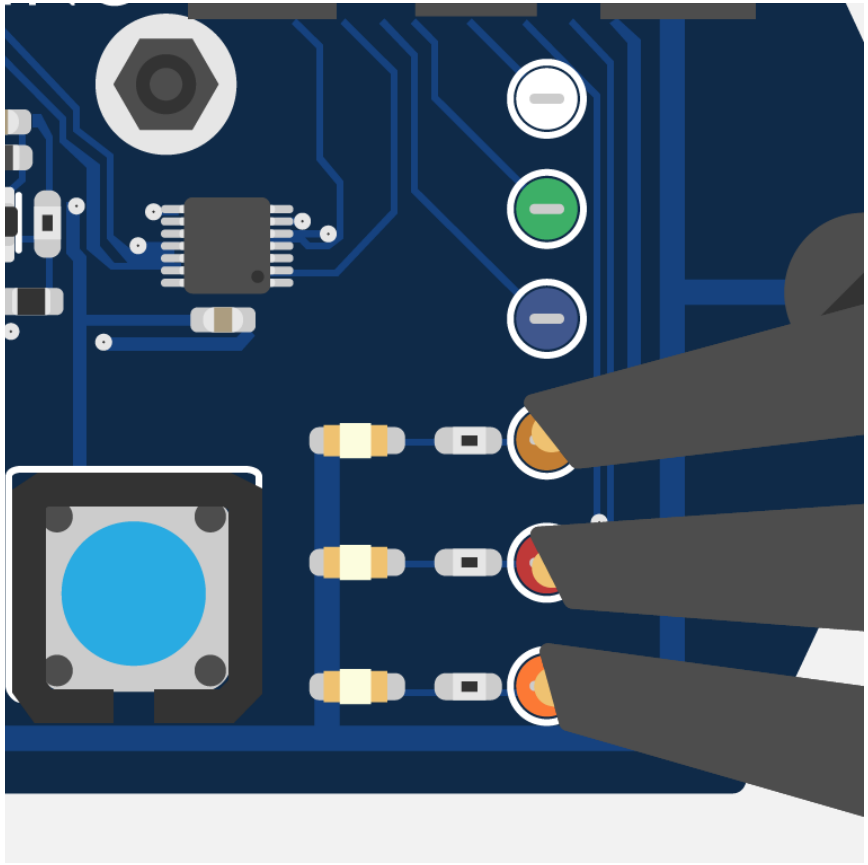
1. The AMT-OTZ-1 module has test points for quadrature and commutation signals. These can be used for verifying encoder alignment or quick access to debugging the encoder.

2. An oscilloscope probe or similar device may be used with the test points.

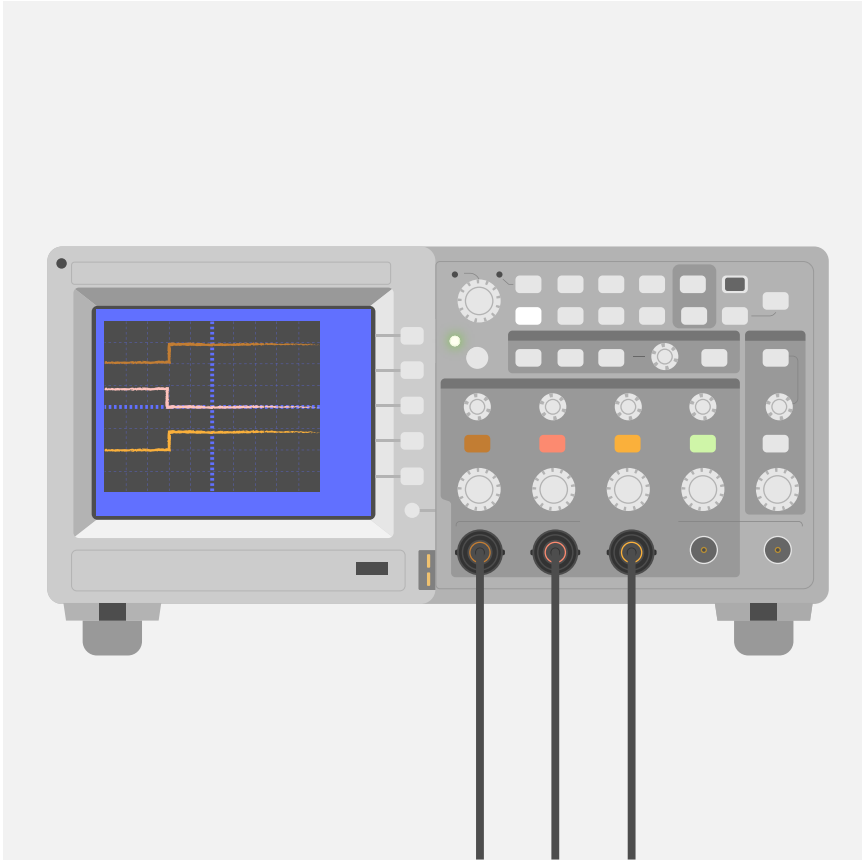


Using Test Points

3 Attach probes to the corresponding test points of interest.



4 Use an oscilloscope or logic capture device to observe encoder signals.



Thank you for using the AMT-OTZ-1.
If you have any questions you can contact us at
www.cuidevices.com/contact