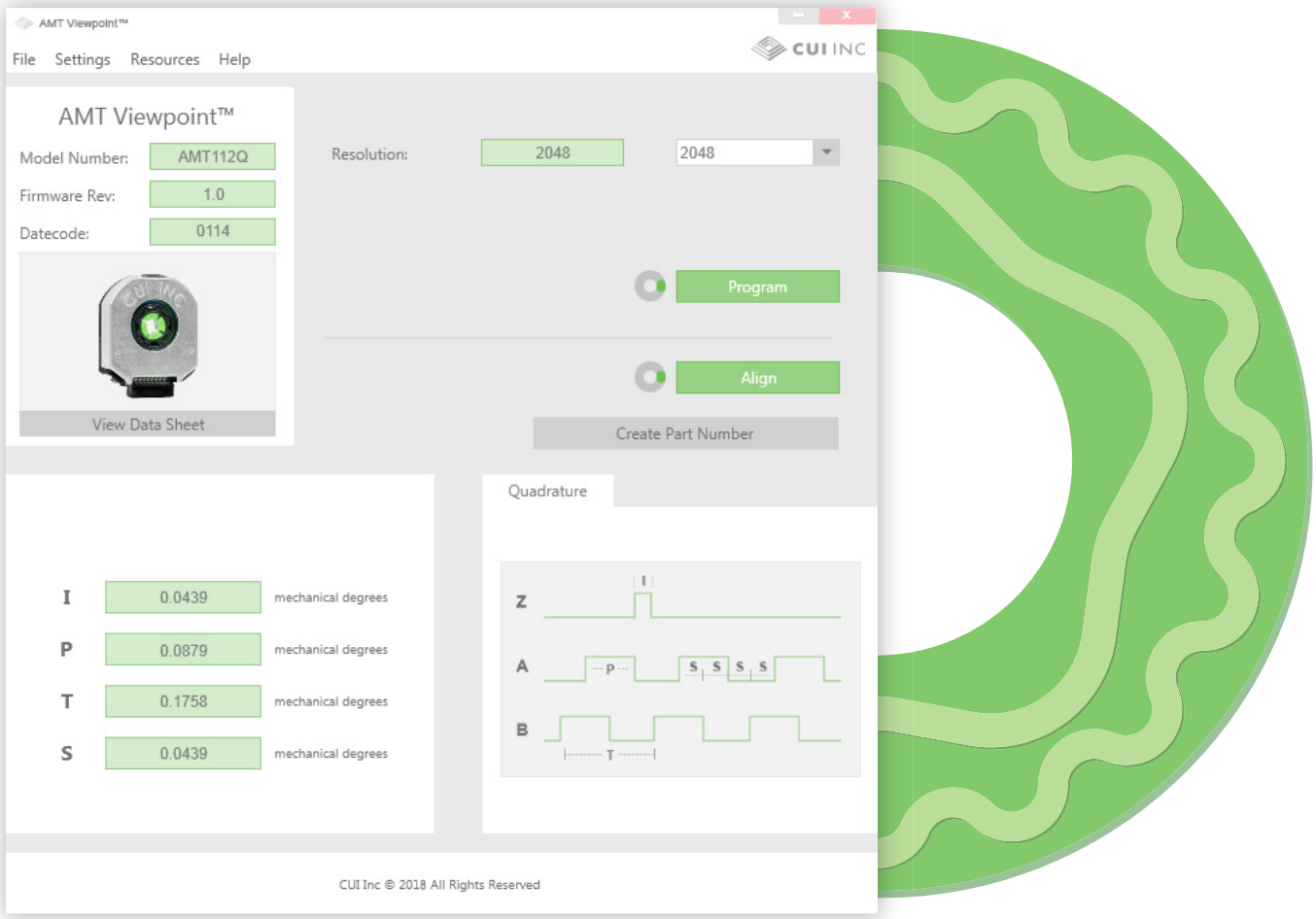
AMT Viewpoint™ User Guide



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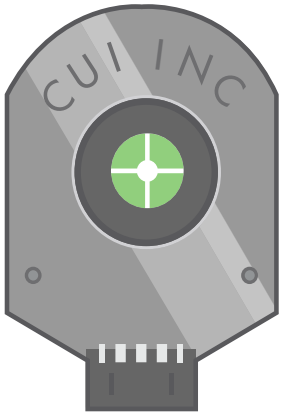
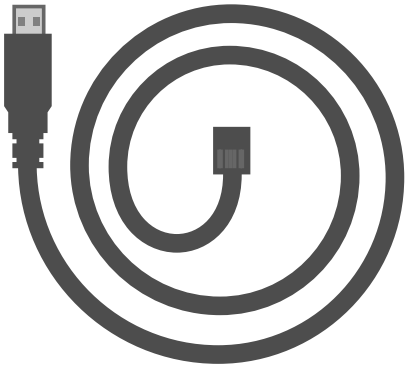
Introduction

The AMT Viewpoint™ is a Graphical User Interface (GUI) that allows for an unprecedented level of visibility and control thanks to the innovative design of the AMT modular encoder series. Via the simple software interface, users are able to set and control a range of parameters, reducing development time and virtually eliminating tedious steps in the assembly process. Additionally, the software allows engineers access to a range of diagnostic data for quick analysis during design or in the field.

What You'll Need:



AMT11, AMT20, or AMT31 Encoder*



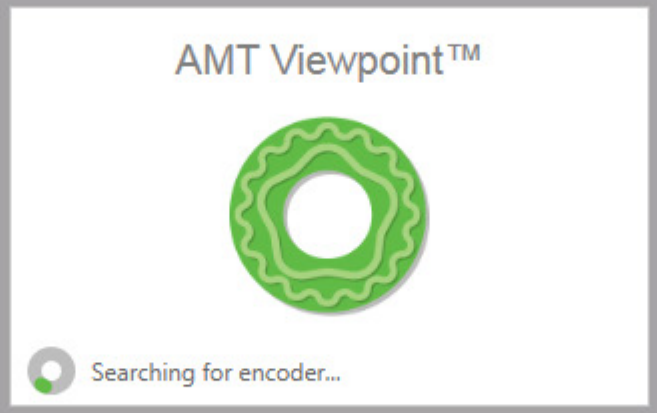
AMT USB or SPI Connector Cable

A Windows PC (Windows 7 or higher required)

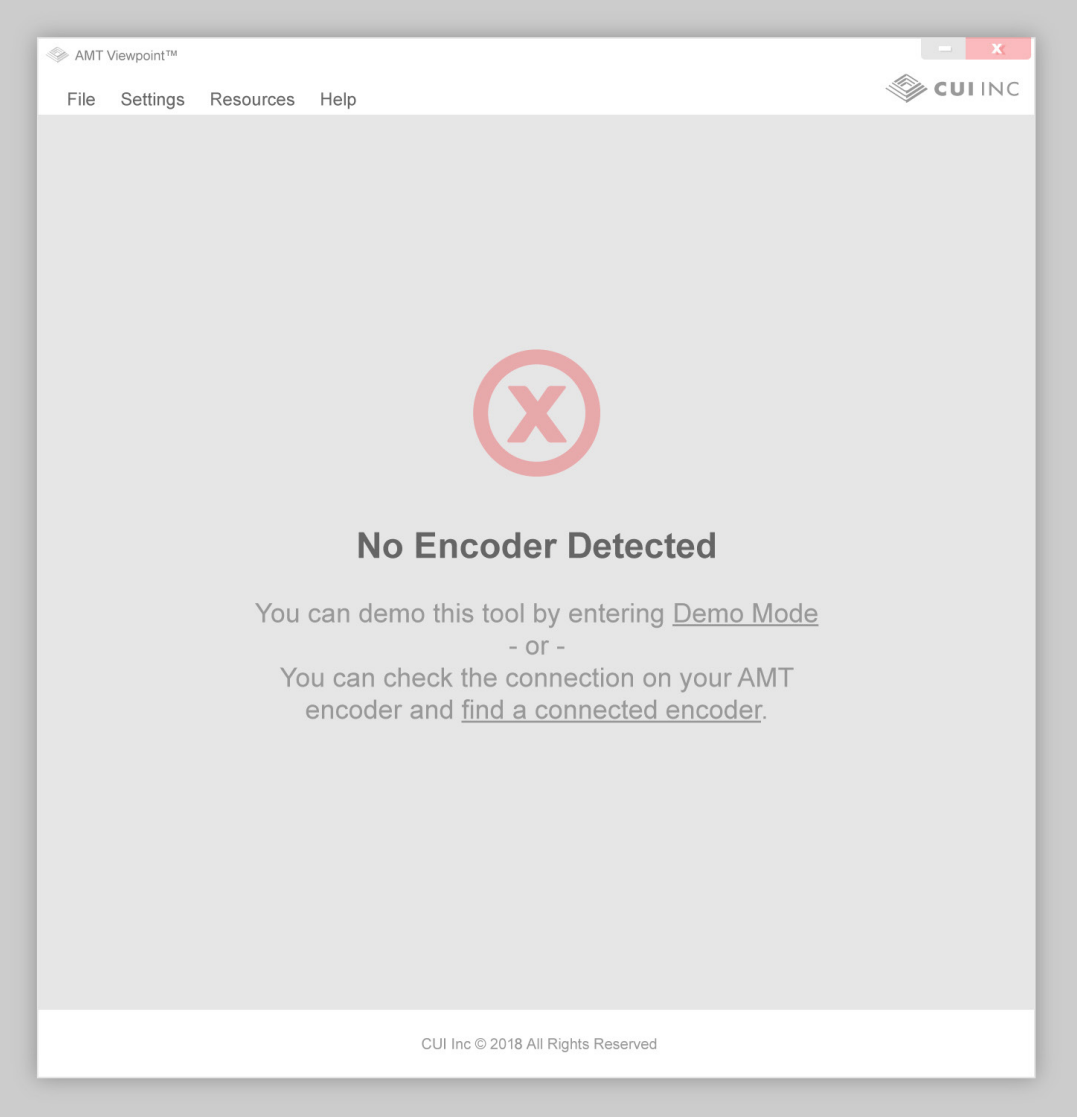
** If you have not yet acquired an AMT encoder and Cable, the AMT Viewpoint™ GUI can be explored in "Demo Mode" (see page 6)*

Getting Started

1. Download the AMT Viewpoint GUI. *(www.cui.com/amt-register)*
2. Plug the AMT USB or SPI cable into your PC and all the necessary drivers will install.
3. Connect the encoder to the cable.
4. Open the AMT Viewpoint GUI.
5. Upon opening, the GUI will search for an encoder (see below).



Getting Started

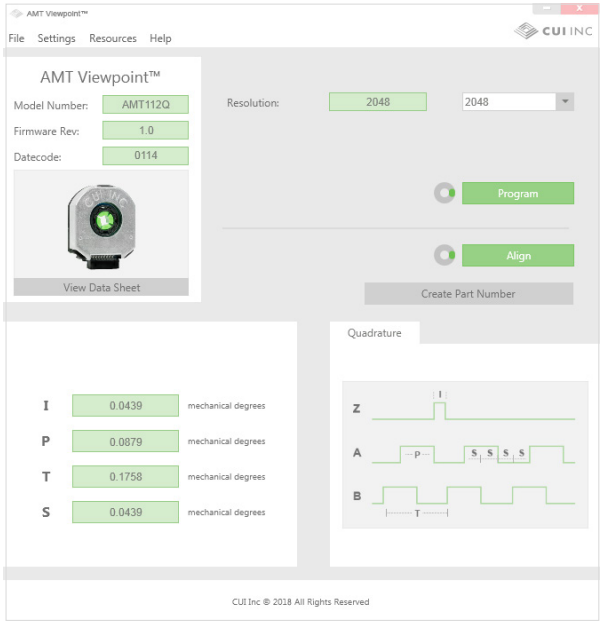


6 If the “No Encoder Detected” message appears, double check your encoder’s connection and click “select the encoder” or click “Demo Mode” to view the application without an encoder.

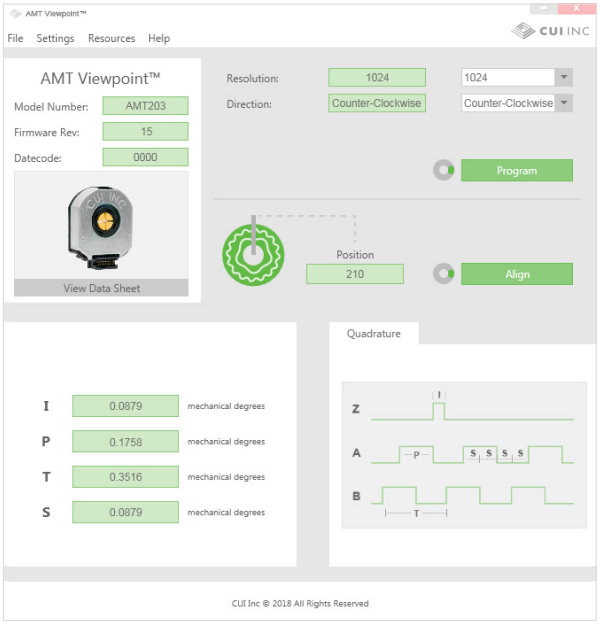
Read more about “Demo Mode” on page 6.

Getting Started

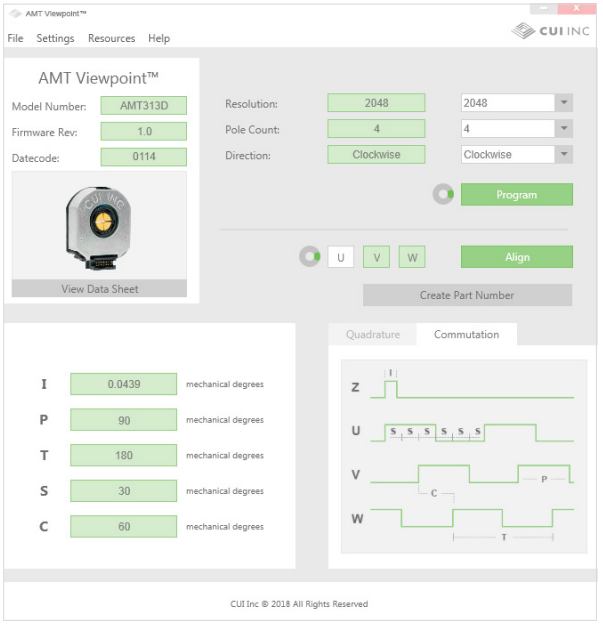
7 The AMT Viewpoint GUI has three different views depending on the type of the encoder that is connected to the software (Incremental, Absolute, and Commutation). These slight differences can be seen in the “Demo Mode” or when both types of encoders are present.



Incremental Encoder View

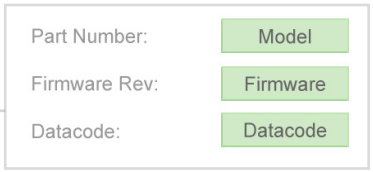


Absolute Encoder View



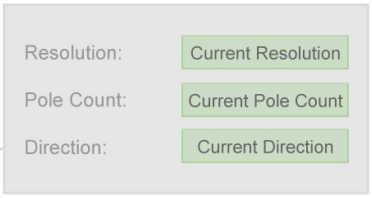
Commutation Encoder View

Getting Started



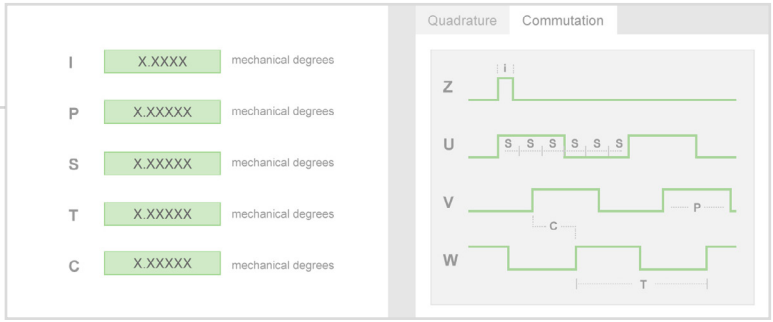
General Product Information

This window will show you current information about your encoder including the model number, current firmware revision, and the manufacturing datecode.



Program Settings

The program setting options will vary slightly depending on the encoder you are using. You can also view the currently programmed settings; *e.g. current resolution*, *current pole count*, and *current direction*.



Waveforms

In addition to the current information, a waveform graph tool is shown to help you calculate timing values based on resolution settings.

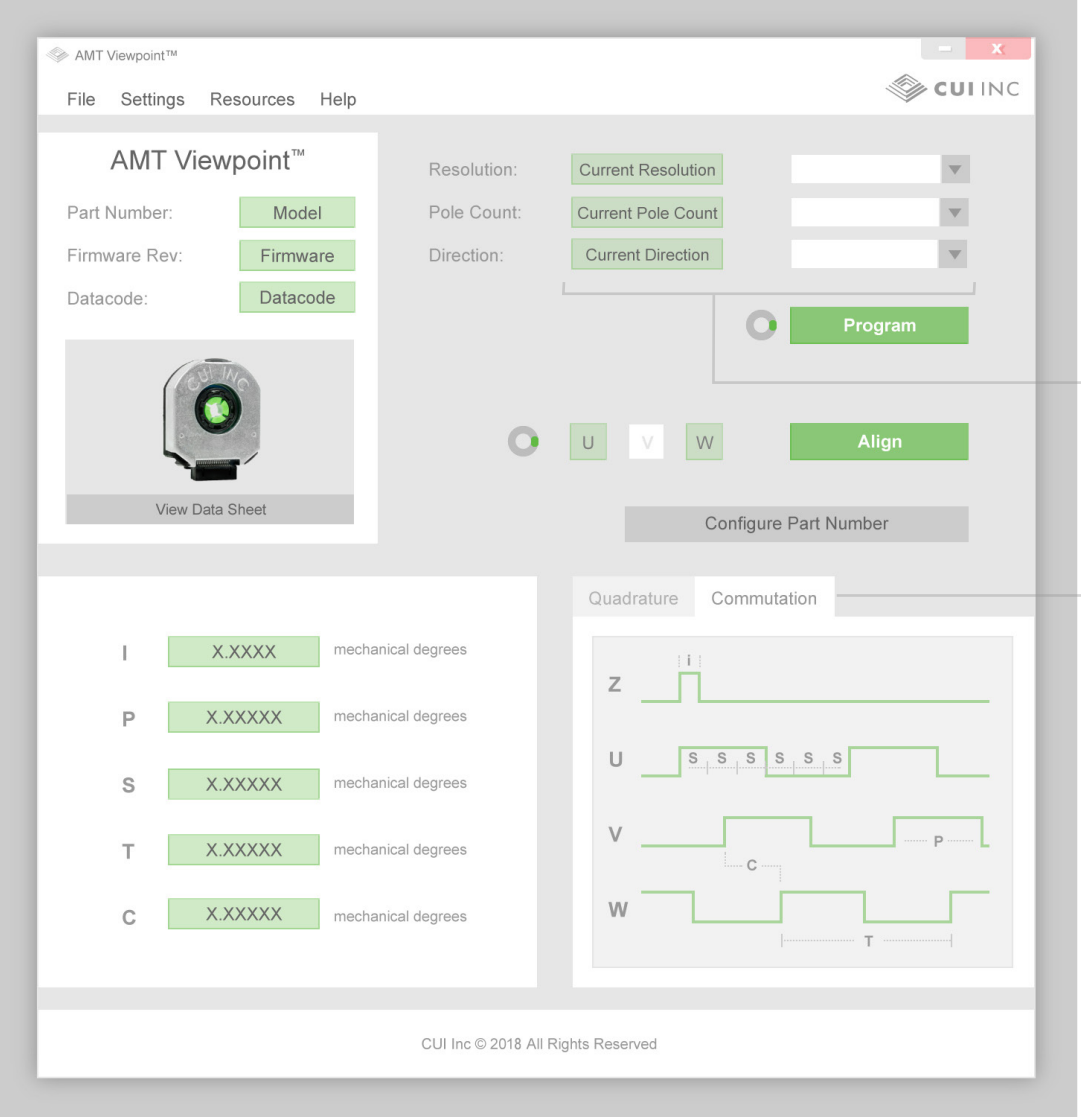
Demo Mode

Demo Mode allows the user to experience what AMT Viewpoint has to offer before purchasing an AMT encoder or while no encoder is connected.

The buttons at the top of the window allow for the user to switch between an incremental or commutation encoder interface. Currently there is no absolute encoder demo.

The other functions simulate how Viewpoint will function as if an encoder was attached.

Determining Settings

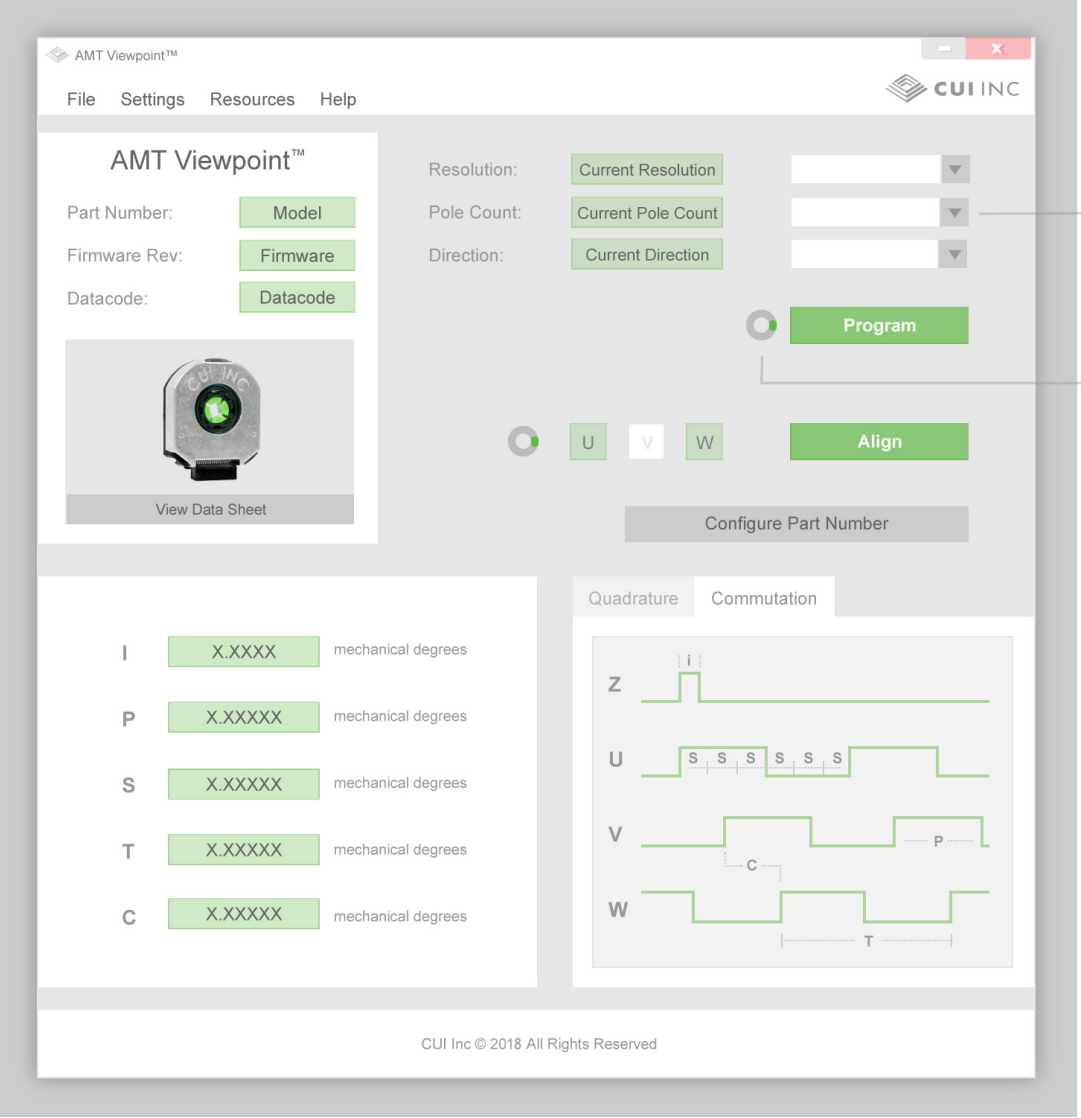


AMT Viewpoint has a waveform graph tool that allows the user to see what the timing is for each signal based on the resolution that is selected. These values are expressed as mechanical degrees and a simple calculation by the user can determine precise time values.

The values shown on the left side adjust automatically as the options in the dropdown boxes change values.

If using a commutation encoder, you can switch tabs between quadrature waveforms and commutation waveforms.

Programming an Encoder



To program an encoder, select programmable options from the dropdown menus and press the "Program" button.

The status circle will spin while the encoder is being programmed. This will take about 30 seconds. When programming is complete, the circle will appear green.

Aligning an Encoder

Typically when aligning an encoder the user must go through a tedious installation process to align the mechanical disk accurately.

The AMT encoder is very unique in that its index can be set digitally. With a push of a button (or more accurately, the delivery of a serial command), the encoder can be instantly aligned to its current position.

Incremental / Absolute Alignment

Not Aligned *Aligned*

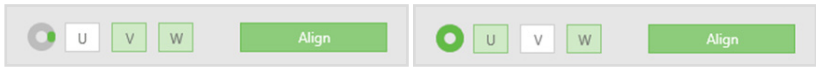
To align an encoder using AMT Viewpoint simply press the “Align” button. This action will only take a second. It is completed when the status circle appears completely green.

The zero position is now stored in the encoders memory and will remain there even after power has been removed.

The zero position of an AMT11 or AMT20 encoder will always line up with the rising edge of the Z signal (index). It should be noted that if the encoder is reprogrammed, the old zero position will be lost and the encoder will need to be aligned again.

Commutation Alignment

Not Aligned *Aligned*

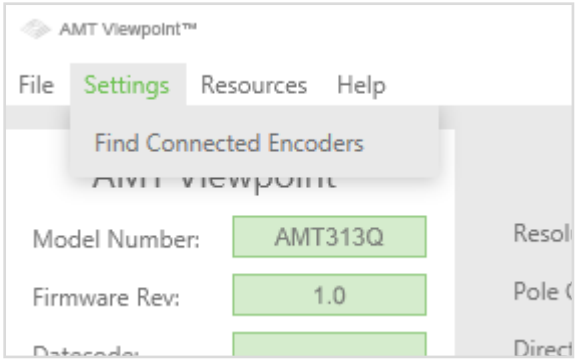


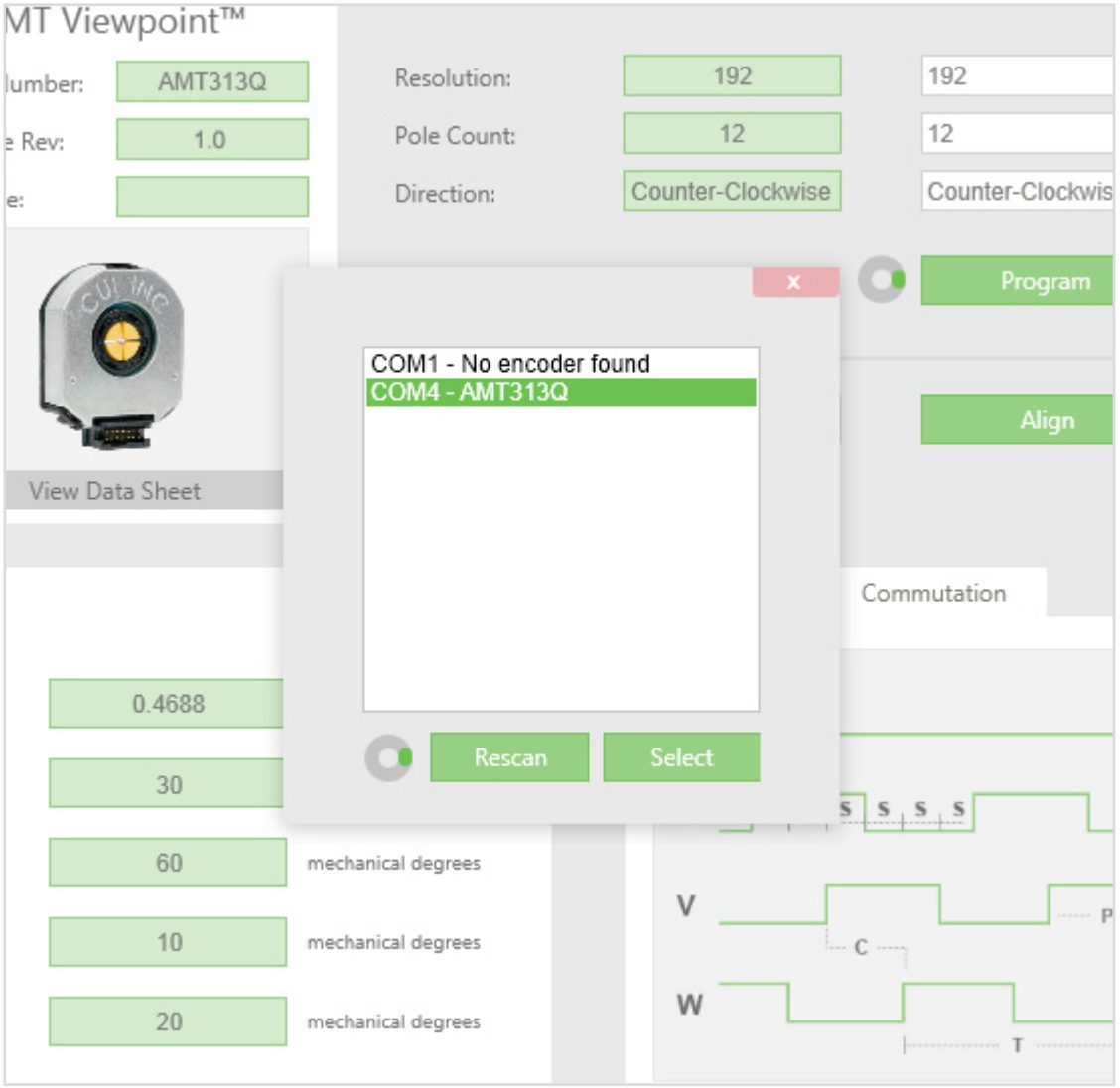
Aligning a commutation encoder is just as easy. When aligning the commutation encoder, you can see the resulting U/V/W signal status as a verification. The zero point of an AMT31 commutation encoder will always line up with the rising edge of the U signal. For reference, this is displayed on the waveform graphs on the bottom right section of the screen. This means that if properly aligned, the U and W signals will be active, while the V signal is low.

Connecting an Encoder

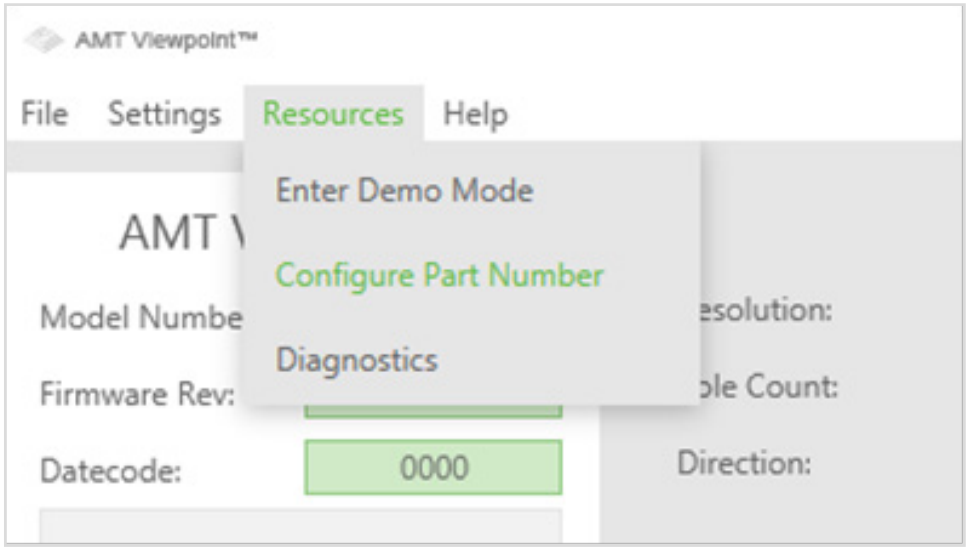
If connection with the encoder is lost, or if multiple encoders are connected simultaneously, you can navigate to the settings menu to have AMT Viewpoint search for encoder(s) again as it did during startup.

Settings > Find Connected Encoders



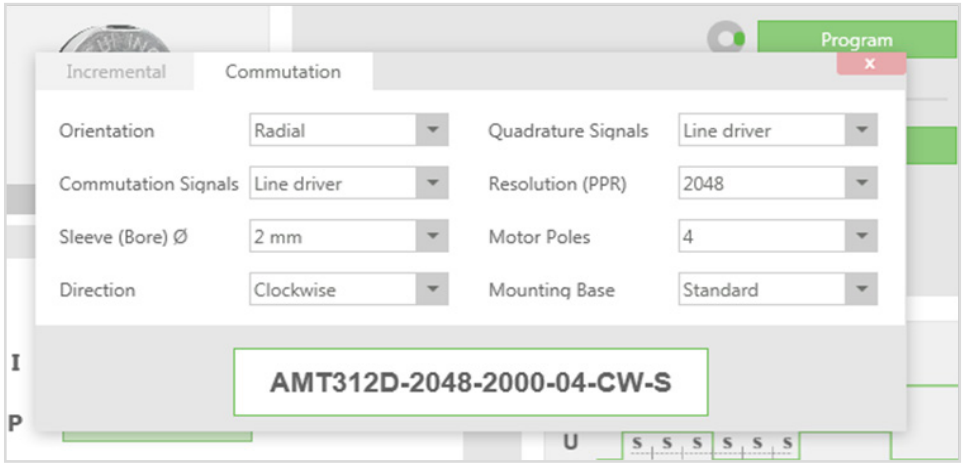


Part Number Configuration



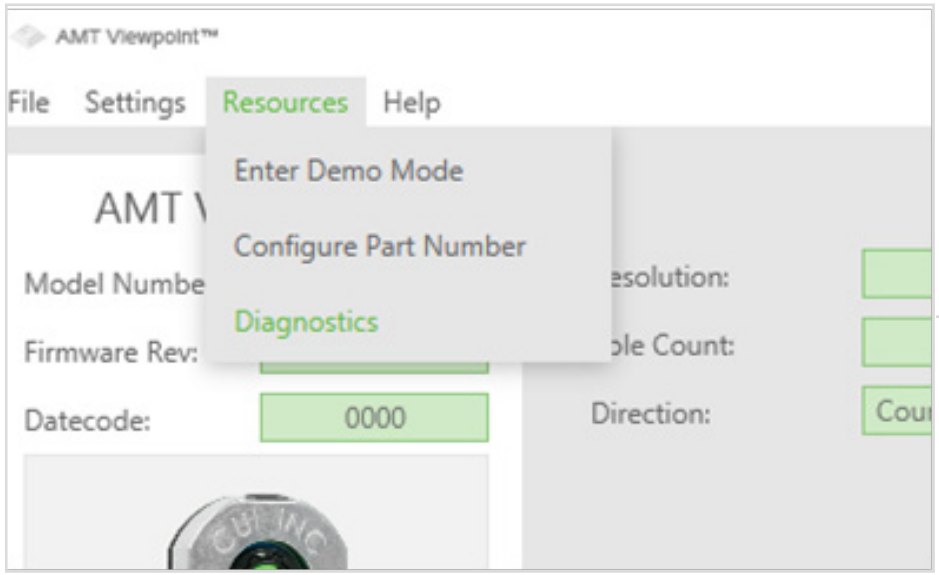
The AMT Viewpoint contains a tool that allows you to create AMT11, AMT20, and AMT31 part numbers for direct ordering from CUI. To access this tool navigate to:

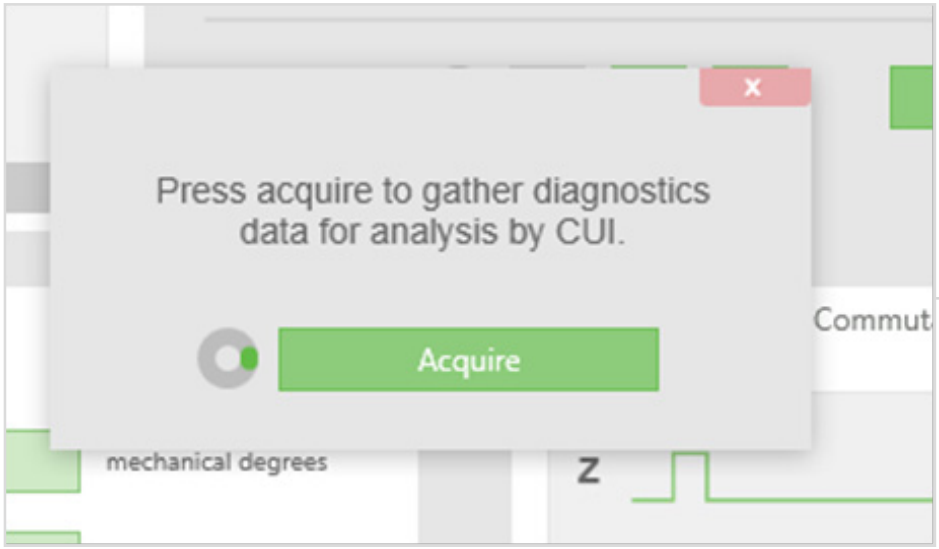
Resources > Configure Part Number



Use the dropdown boxes to select all of the options required for the encoder. The Part Number Configurator will dynamically build the number as different settings are chosen from the available options. Then, simply copy the resulting text from the box at the bottom of the screen.

Diagnostics





CUI's AMT11 and AMT31 encoders allow for the extraction of diagnostic information for quicker field failure analysis. To gather diagnostics from an encoder, navigate to:
Resources > Diagnostics

When the diagnostics window appears, click "Acquire" and wait for the data to be retrieved.

Once data has been acquired it will need to be saved and sent to CUI for review. The files can be sent to:
AMTsupport@cui.com

** Diagnostics aren't available for the AMT20*

Thank you for downloading the AMT Viewpoint™. If you have any questions you can contact us at AMTsupport@cui.com.