


AMT VIEWPOINT™ USER GUIDE

AMT VIEWPOINT

HELP

AMT313S
Firmware: 0x15 - Datecode: 3518



Encoder Datasheet

AMT Landing Page
Viewpoint User Guide
Mounting Instructions
CUI Insights Motion Blog
Resource Library
Technical Support

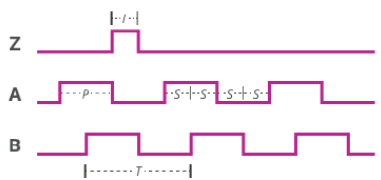
CURRENT CONFIGURATION:
R: 125 D: Clockwise P: 6

Resolution: 125
Direction:
Pole Count: 6

PROGRAM

ALIGN

QUADRATURE | **COMMUTATION**



I 0.72 P 1.44 T 2.88
S 0.72

Readings are in Mechanical Degrees

ACQUIRE DIAGNOSTICS

RECONNECT

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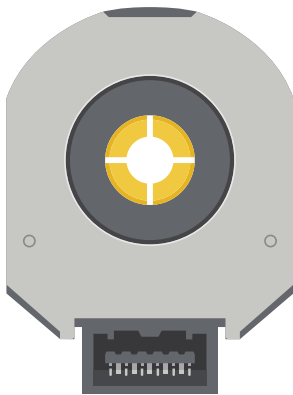
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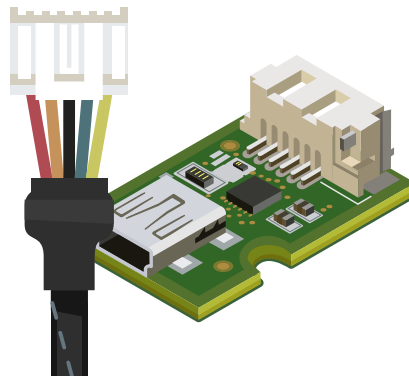
INTRODUCTION

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, AMT13, AMT20, AMT21, AMT22,
AMT23, AMT24, AMT31,
or AMT33 Encoder

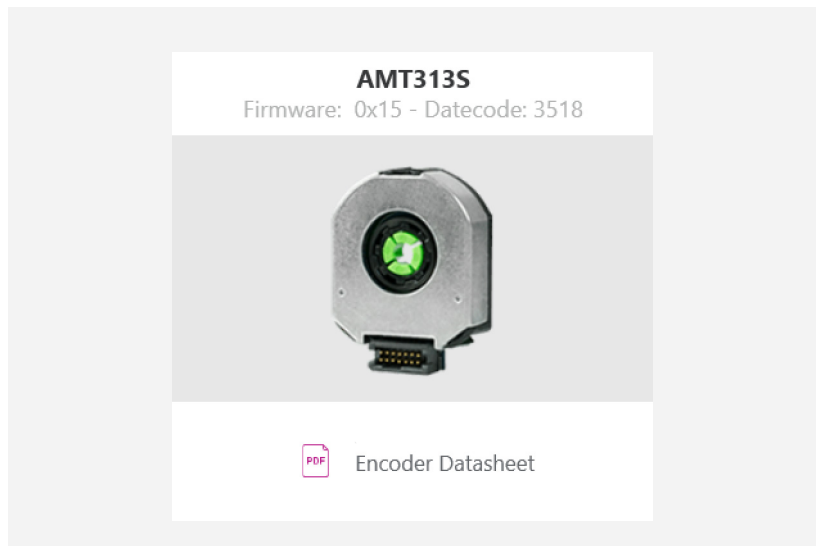
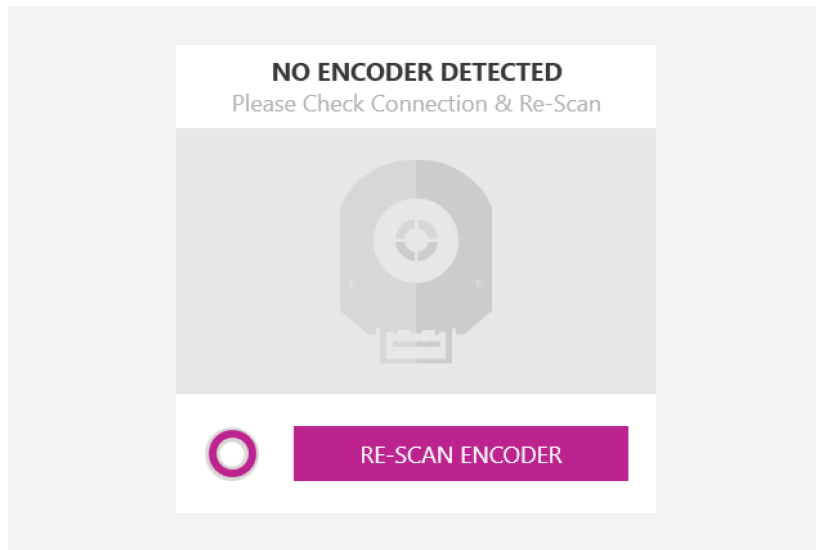


The Appropriate AMT Programming
Module and Cable



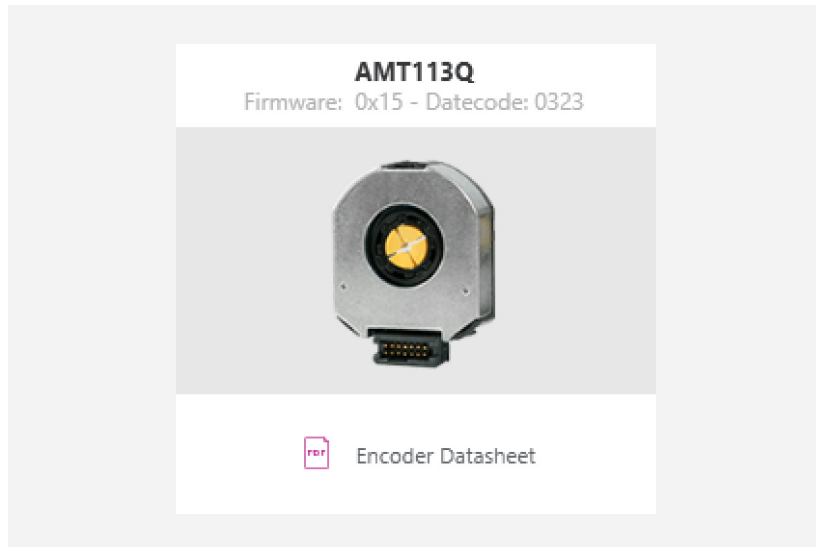
A Windows PC
(Windows 10 or higher required)

GETTING STARTED



- 1 Download the AMT Viewpoint:
www.cuidevices.com/amt-viewpoint
- 2 Plug the AMT Programming Module into your PC using your own USB Mini B to Type A cable.
- 3 Connect the encoder to the programming cable.
- 4 Open the AMT Viewpoint GUI.
- 5 Upon opening, the GUI will search for an encoder (see below).
- 6 If the “NO ENCODER DETECTED” message appears, double check your encoder’s connection and click “RE-SCAN”.
- 7 Once an encoder has been detected the window will populate with an encoder specific layout.

GETTING STARTED



1 Encoder Overview Card

When an encoder is connected, this card highlights the firmware revision, date code, and quick link to the datasheet.

2 Resource Card

[AMT Landing Page](#) - View the most up-to-date information on the AMT Viewpoint. Read the change logs for recent updates and download the latest versions.

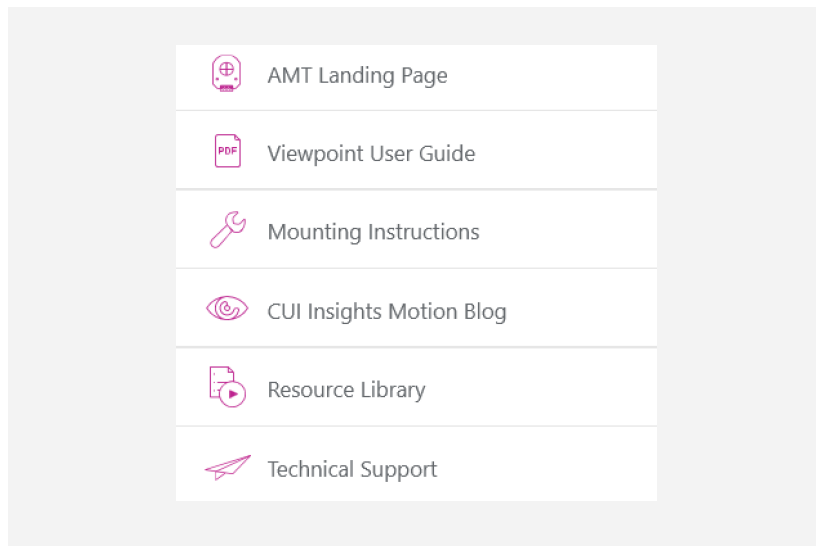
[Viewpoint User Guide](#) - This guide.

[Assembly Instructions](#) - Watch the video or text instructions for putting together your AMT encoder.

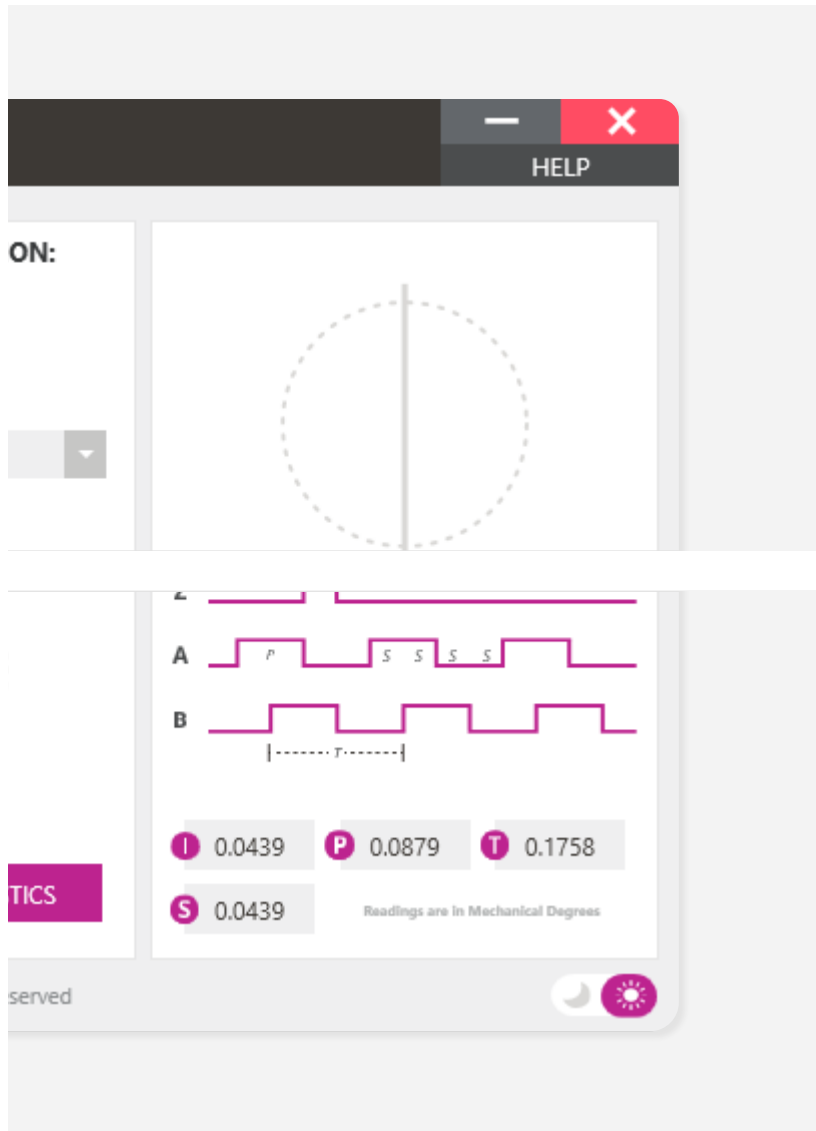
[CUI Insights Motion Blog](#) - Read our ever-expanding selection of encoder-specific blog posts.

[Resource Library](#) - View all of CUI Devices' motion-specific resources from white papers and application notes to videos.

[Technical Support](#) - Contact CUI Devices for any technical questions or issues you're experiencing.



GETTING STARTED



1 Help Button

View a menu with an array of links designed to help you overcome any roadblocks you may hit while using the GUI.

[About AMT Viewpoint](#) - Learn about the details behind the AMT Viewpoint including version number.

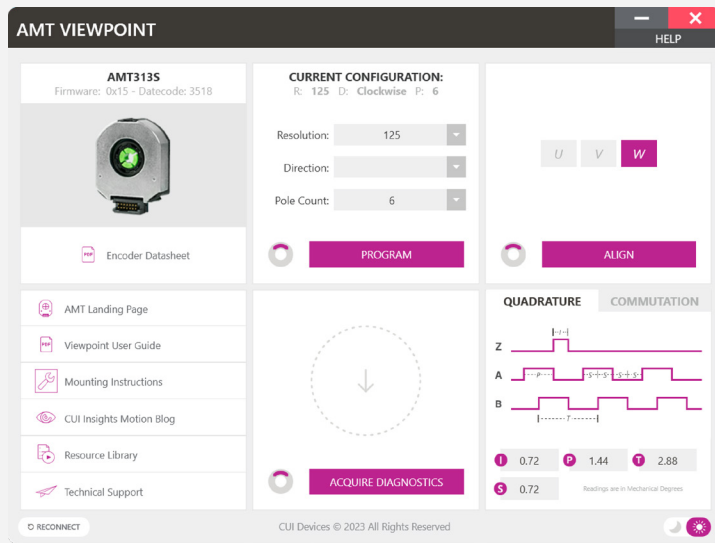
[Contact CUI Devices](#) - Get in touch with us for any questions you might have on the AMT Viewpoint.

[AMT Viewpoint User Guide](#) - This guide.

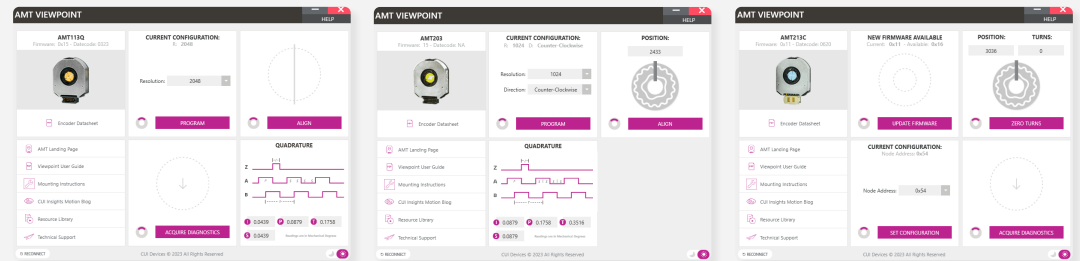
2 Theme Toggle

Toggle between light and dark themes based on preference.

ENCODER SPECIFIC WINDOWS



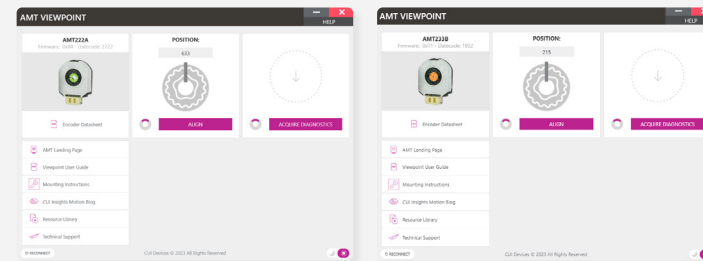
AMT31 & AMT33



AMT11 & AMT13

AMT20

AMT21 & AMT24



AMT22

AMT23

The AMT Viewpoint's format and settings will adapt based on the type of encoder that is connected. On the following pages, features and interface instructions for each AMT encoder series is discussed.

AMT11 & 13 SERIES

Current Configuration Card

Encoder Overview Card

Alignment Card

Resource Card

Waveforms Card

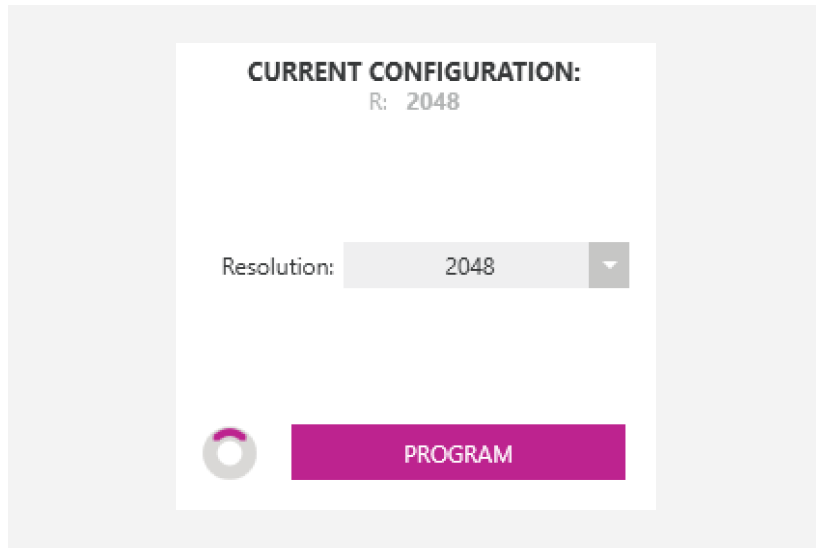
Diagnostics Card

The screenshot displays the AMT VIEWPOINT software interface, which is organized into several functional cards:

- Encoder Overview Card:** Shows the model **AMT113Q** with firmware **0x15** and datecode **0323**. It includes an image of the encoder and a link to the **Encoder Datasheet**.
- Current Configuration Card:** Displays the **CURRENT CONFIGURATION: R: 2048**. The resolution is set to **2048**. It features a **PROGRAM** button and a status indicator.
- Alignment Card:** Shows a circular alignment diagram with a vertical line and an **ALIGN** button.
- Resource Card:** A sidebar menu with links to: **AMT Landing Page**, **Viewpoint User Guide**, **Mounting Instructions**, **CUI Insights Motion Blog**, **Resource Library**, and **Technical Support**.
- Diagnostics Card:** Features a large circular arrow icon and an **ACQUIRE DIAGNOSTICS** button.
- Waveforms Card:** Titled **QUADRATURE**, it shows three waveforms labeled **Z**, **A**, and **B**. Below the waveforms, it lists timing parameters: **I** 0.0439, **P** 0.0879, **T** 0.1758, and **S** 0.0439. A note states: *Readings are in Mechanical Degrees*.

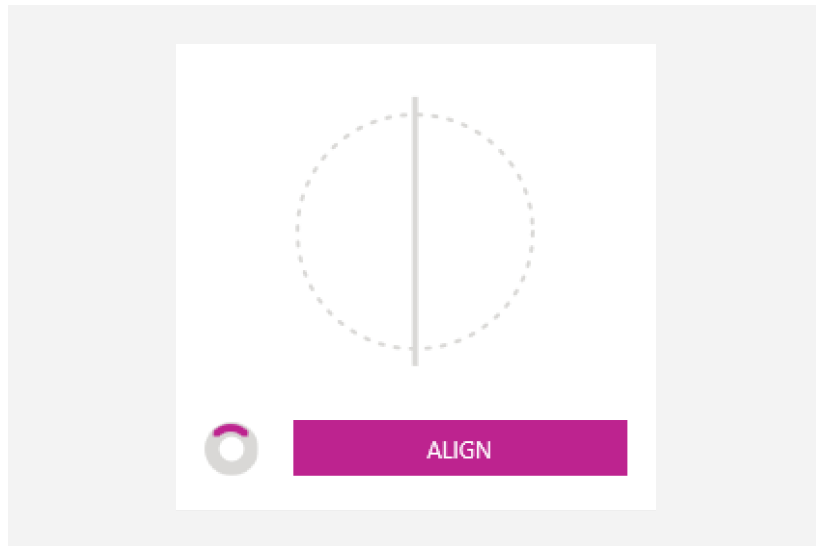
At the bottom of the interface, there is a **RECONNECT** button, the copyright notice **CUI Devices © 2023 All Rights Reserved**, and system icons for a moon and a sun.

AMT11 & 13 SERIES



1 Current Configuration Card

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.



2 Alignment Card

Typically when aligning an encoder the user must go through a tedious installation process to accurately align the mechanical disk. The AMT encoder is unique in that its index can be set digitally. With the push of a button (or more accurately, the delivery of a serial command), the encoder can be instantly aligned to its current position.

To align an encoder using the AMT Viewpoint, simply press the “ALIGN” button. This action will only take a second. It is finished when the status circle appears completely green. The zero position is now stored in the encoder’s memory and will remain there even after power has been removed.

AMT11 & 13 SERIES

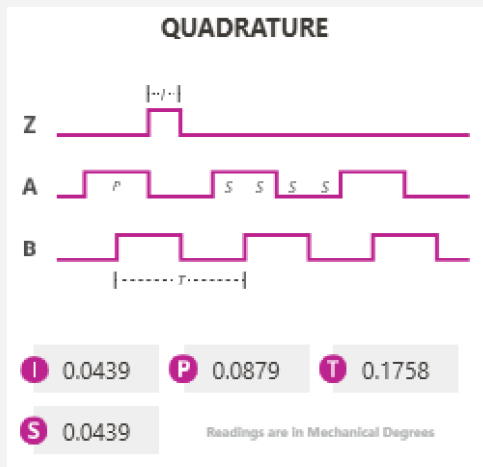


3 Diagnostics Card

CUI Devices' encoders allow for the extraction of diagnostic information for quicker field failure analysis. To gather diagnostics from an encoder, click "ACQUIRE DIAGNOSTICS" and wait for the data to be retrieved.

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

www.cuidevices.com/contact



4 Waveforms Card

The AMT11 and AMT13 encoders allow for multiple resolutions to be selected. This card calculates the various timing values for each resolution. Select a different resolution to adjust the values.

AMT20 SERIES

Current Configuration Card

Encoder Overview Card

Position Card

Resource Card

Waveforms Card

The screenshot displays the AMT VIEWPOINT software interface with the following components:

- Header:** "AMT VIEWPOINT" on the left and "HELP" on the right.
- Encoder Overview Card:** Shows "AMT203" with "Firmware: 15 - Datecode: NA" and an image of the encoder. A link for "Encoder Datasheet" is provided.
- Current Configuration Card:** Displays "CURRENT CONFIGURATION:" with "R: 1024 D: Counter-Clockwise". It includes dropdown menus for "Resolution: 1024" and "Direction: Counter-Clockwise", and a "PROGRAM" button.
- Position Card:** Shows "POSITION:" with a value of "2433" and a gear icon. It includes an "ALIGN" button.
- Resource Card:** A vertical list of links: "AMT Landing Page", "Viewpoint User Guide", "Mounting Instructions", "CUI Insights Motion Blog", "Resource Library", and "Technical Support".
- Waveforms Card:** Titled "QUADRATURE", it shows three waveforms labeled "Z", "A", and "B". Below the waveforms are timing parameters: "I 0.0879", "P 0.1758", "T 0.3516", and "S 0.0879". A note states "Readings are in Mechanical Degrees".
- Footer:** "RECONNECT" button on the left, "CUI Devices © 2023 All Rights Reserved" in the center, and a power icon on the right.

AMT20 SERIES

1 Current Configuration Card

To program an encoder, select programmable options from the dropdown menus and press the “PROGRAM” button.

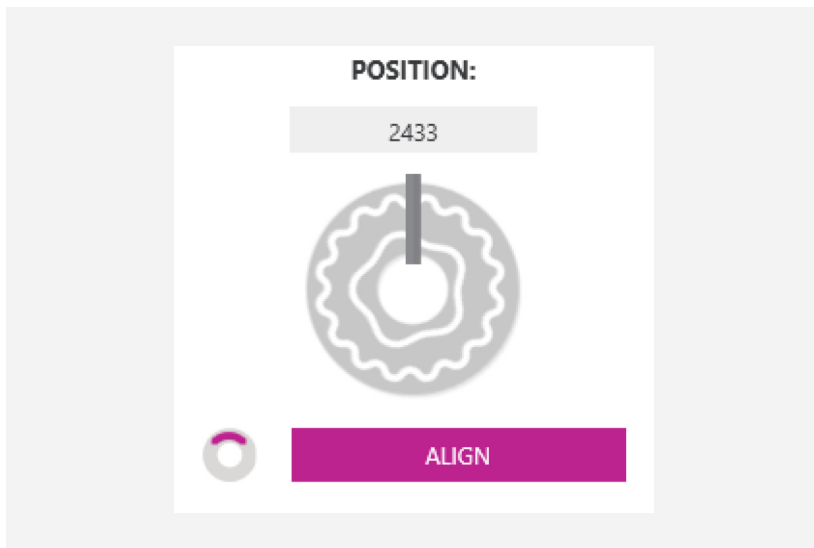
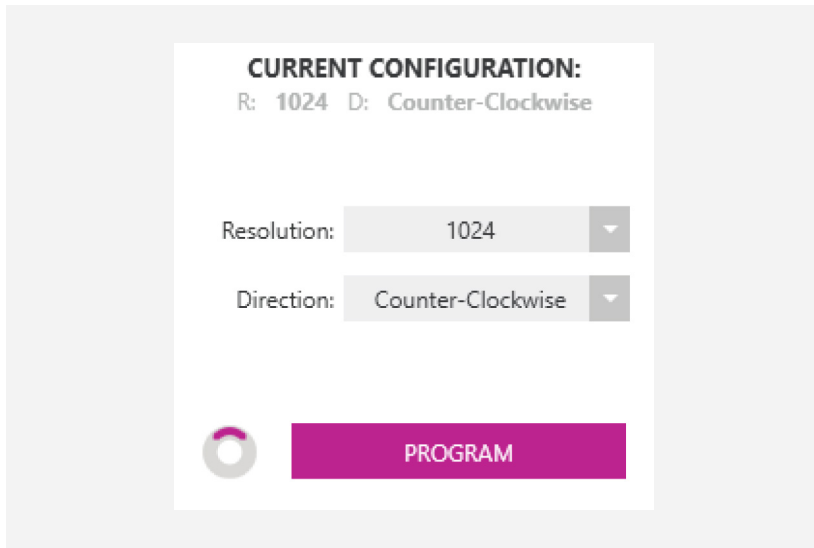
The status circle will spin while the encoder is being programmed. This will take about 4 seconds. When programming is complete, the circle will appear green. The AMT20 does not have the ability to reset itself, so after programming the encoder, it must be power cycled. Once programming is complete a message will appear instructing you to remove the encoder from the programming cable.

2 Position Card

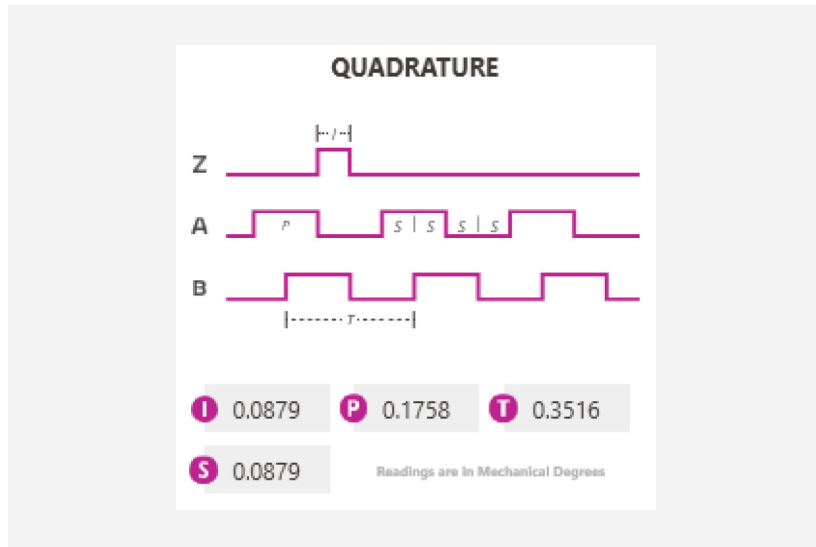
The AMT20 is a digital serial absolute encoder, so with the AMT Viewpoint you have the ability to view the current absolute position, along with the ability to zero set that position.

Typically when aligning an encoder the user must go through a tedious installation process to accurately align the mechanical disk. The AMT encoder is unique in that its zero position can be set digitally. With the push of a button (or more accurately, the delivery of a serial command), the encoder can be instantly aligned to its current position.

[continued]



AMT20 SERIES



To align an encoder using the AMT Viewpoint, simply press the “ALIGN” button. This action will only take a second. It is finished when the status circle appears completely green. The zero position is now stored in the encoder’s memory and will remain there even after power has been removed. Again, the AMT20 does not have the ability to reset itself, so after programming the encoder, it must be power cycled. Once programming is complete a message will appear instructing you to remove the encoder from the programming cable.

3 Waveforms Card

The AMT20 encoder allows for multiple resolutions to be selected. This card calculates the various timing values for each resolution. Select a different resolution to adjust the values.

AMT21 & 24 SERIES

New Firmware Card

Encoder Overview Card

Position Card

Resource Card

Diagnostics Card

Current Configuration Card

The screenshot displays the AMT Viewpoint software interface for an AMT213C encoder. The interface is organized into several functional cards:

- Encoder Overview Card:** Displays the model number **AMT213C**, firmware version **0x11**, and datecode **0620**. It includes an image of the encoder and a link to the **Encoder Datasheet**.
- New Firmware Card:** Alerts that **NEW FIRMWARE AVAILABLE** with the current version **0x11** and available version **0x16**. It features a circular progress indicator and an **UPDATE FIRMWARE** button.
- Position Card:** Shows the current **POSITION: 3036** and **TURN: 0**. It includes a gear icon and a **ZERO TURNS** button.
- Current Configuration Card:** Displays the **CURRENT CONFIGURATION:** with a **Node Address: 0x54**. It includes a dropdown menu for the node address and a **SET CONFIGURATION** button.
- Diagnostics Card:** Features a circular arrow icon and an **ACQUIRE DIAGNOSTICS** button.
- Resource Card:** A sidebar menu with links to **AMT Landing Page**, **Viewpoint User Guide**, **Mounting Instructions**, **CUI Insights Motion Blog**, **Resource Library**, and **Technical Support**.

The interface also includes a **RECONNECT** button at the bottom left, a copyright notice **CUI Devices © 2023 All Rights Reserved** at the bottom center, and a **HELP** button at the top right.

AMT21 & 24 SERIES

1 Current Configuration Card

The AMT21 & AMT24 are able to share a bus with multiple encoders. To do this each encoder must have a unique RS485 node address. Select an address from the dropdown list and click “SET CONFIGURATION” to program the encoder with the new address.

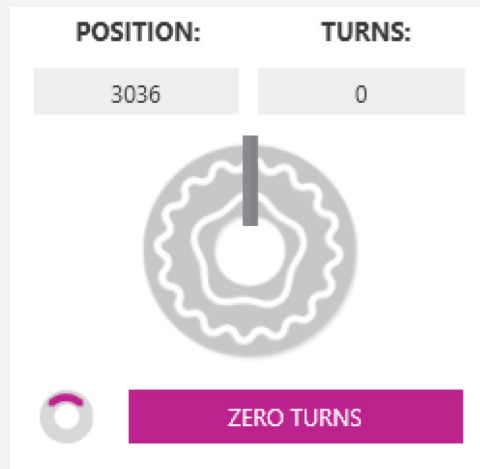
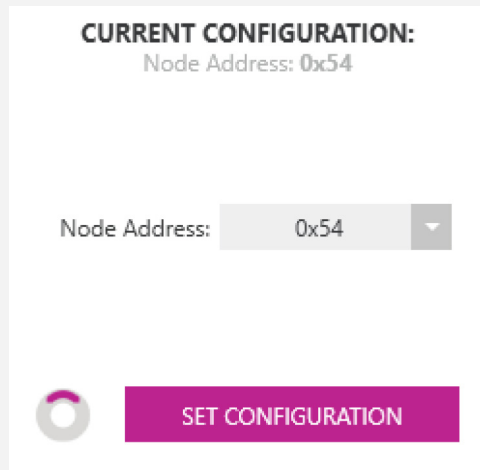
The status circle will spin while the encoder is being programmed. This will take about 4 seconds. When programming is complete, the circle will appear green.

2 Position Card

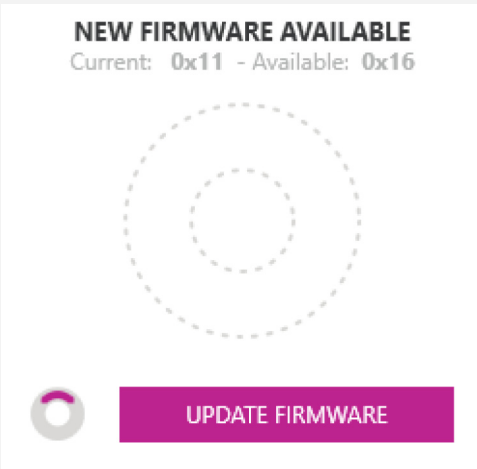
The AMT21 & AMT24 are digital serial absolute encoders, so with the AMT Viewpoint you have the ability to view the current absolute position, along with the ability to zero set that position.

Typically when aligning an encoder the user must go through a tedious installation process to accurately align the mechanical disk. The AMT encoder is unique in that its zero position can be set digitally. With the push of a button (or more accurately, the delivery of a serial command), the encoder can be instantly aligned to its current position.

[continued]



AMT21 & 24 SERIES



3 New Firmware Card

If a firmware update is available, this card will appear showing the newest firmware version. Click “UPDATE FIRMWARE” to update the encoder’s firmware.



4 Diagnostics Card

CUI Devices’ encoders allow for the extraction of diagnostic information for quicker field failure analysis. To gather diagnostics from an encoder, click “ACQUIRE DIAGNOSTICS” and wait for the data to be retrieved.

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

www.cuidevices.com/contact

AMT22 SERIES

Position Card

Encoder Overview Card

Diagnostics Card

Resource Card

The screenshot displays the AMT VIEWPOINT software interface. At the top, a black header bar contains the text "AMT VIEWPOINT" on the left and a "HELP" button on the right. The main content area is divided into three vertical panels. The left panel, titled "Encoder Overview Card", shows the model "AMT222A" with firmware "0x04" and datecode "2722", an image of the encoder, and a link to the "Encoder Datasheet". The middle panel, titled "Position Card", shows the current "POSITION:" as "633" and an "ALIGN" button. The right panel, titled "Diagnostics Card", features a dashed circle with a downward arrow and an "ACQUIRE DIAGNOSTICS" button. Below these panels is a "Resource Card" with links to the AMT Landing Page, Viewpoint User Guide, Mounting Instructions, CUI Insights Motion Blog, Resource Library, and Technical Support. At the bottom, there is a "RECONNECT" button, the copyright notice "CUI Devices © 2023 All Rights Reserved", and a theme toggle.

AMT22 SERIES

1 Position Card

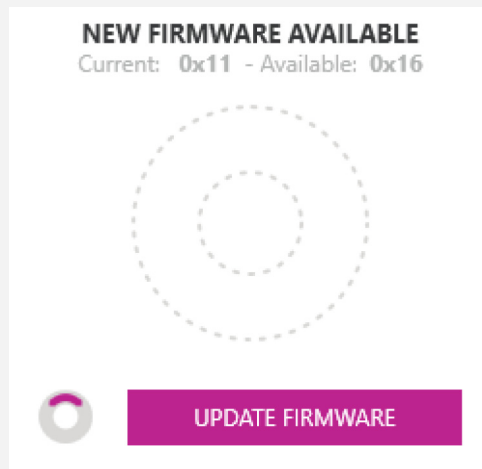
The AMT22 is a digital serial absolute encoder, so with the AMT Viewpoint you have the ability to view the current absolute position, along with the ability to zero set that position.

Typically when aligning an encoder the user must go through a tedious installation process to accurately align the mechanical disk. The AMT encoder is unique in that its zero position can be set digitally. With the push of a button (or more accurately, the delivery of a serial command), the encoder can be instantly aligned to its current position.

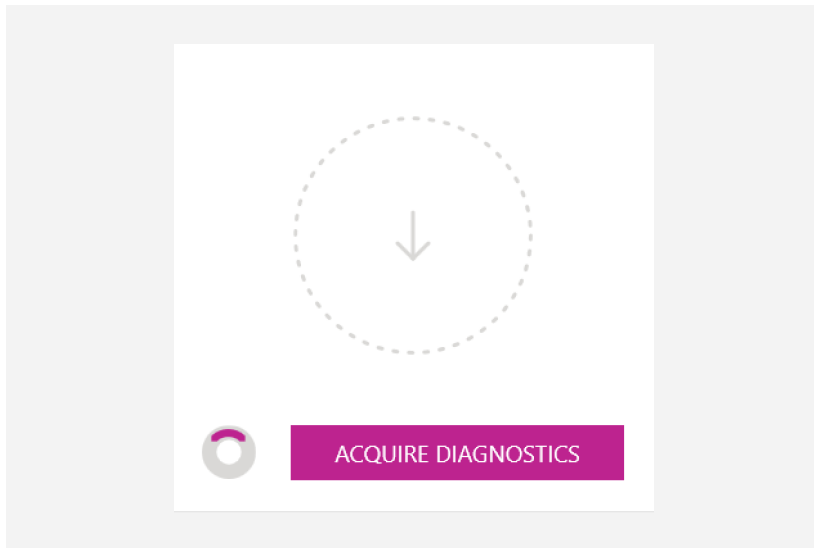
To align an encoder using the AMT Viewpoint, simply press the “ALIGN” button. This action will only take a second. It is finished when the status circle appears completely green. The zero position is now stored in the encoder’s memory and will remain there even after power has been removed.

2 New Firmware Card

If a firmware update is available, this card will appear showing the newest firmware version. Click “UPDATE FIRMWARE” to update the encoder’s firmware.



AMT22 SERIES



3 Diagnostics Card

CUI Devices' encoders allow for the extraction of diagnostic information for quicker field failure analysis. To gather diagnostics from an encoder, click "ACQUIRE DIAGNOSTICS" and wait for the data to be retrieved.

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

www.cuidevices.com/contact

AMT23 SERIES

Position Card

Encoder Overview Card

Diagnostics Card

Resource Card

The screenshot displays the AMT VIEWPOINT software interface. At the top, a black header bar contains the text "AMT VIEWPOINT" on the left and a "HELP" button on the right. The main content area is divided into three vertical panels. The left panel, labeled "Encoder Overview Card", shows the model "AMT233B" with firmware "0x11" and datecode "1922", an image of the encoder, and a link to the "Encoder Datasheet". The middle panel, labeled "Position Card", displays "POSITION: 215" above a gear icon and an "ALIGN" button. The right panel, labeled "Diagnostics Card", features a dashed circle with a downward arrow and an "ACQUIRE DIAGNOSTICS" button. A bottom-left "Resource Card" lists links for "AMT Landing Page", "Viewpoint User Guide", "Mounting Instructions", "CUI Insights Motion Blog", "Resource Library", and "Technical Support". A "RECONNECT" button is located at the bottom left, and the footer contains "CUI Devices © 2023 All Rights Reserved" and a moon icon.

AMT23 SERIES

1 Position Card

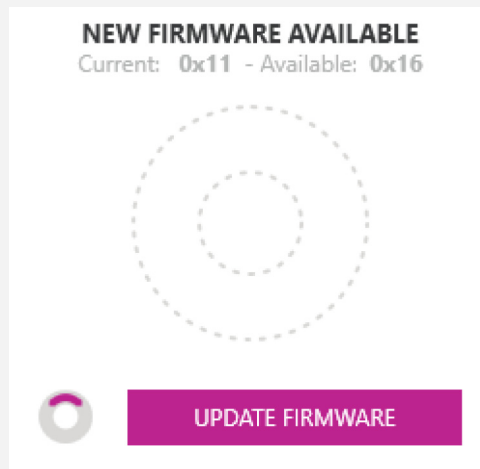
The AMT23 is a digital serial absolute encoder, so with the AMT Viewpoint you have the ability to view the current absolute position, along with the ability to zero set that position.

Typically when aligning an encoder the user must go through a tedious installation process to accurately align the mechanical disk. The AMT encoder is unique in that its zero position can be set digitally. With the push of a button (or more accurately, the delivery of a serial command), the encoder can be instantly aligned to its current position.

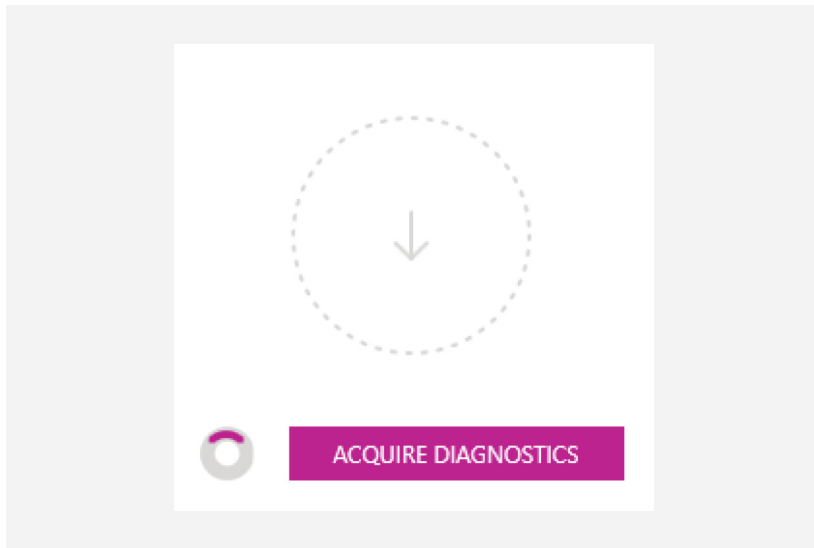
To align an encoder using the AMT Viewpoint, simply press the “ALIGN” button. This action will only take a second. It is finished when the status circle appears completely green. The zero position is now stored in the encoder’s memory and will remain there even after power has been removed.

2 New Firmware Card

If a firmware update is available, this card will appear showing the newest firmware version. Click “UPDATE FIRMWARE” to update the encoder’s firmware.



AMT23 SERIES



3 Diagnostics Card

CUI Devices' encoders allow for the extraction of diagnostic information for quicker field failure analysis. To gather diagnostics from an encoder, click "ACQUIRE DIAGNOSTICS" and wait for the data to be retrieved.

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

www.cuidevices.com/contact

AMT31 & 33 SERIES

Current Configuration Card

Encoder Overview Card

Alignment Card

Resource Card

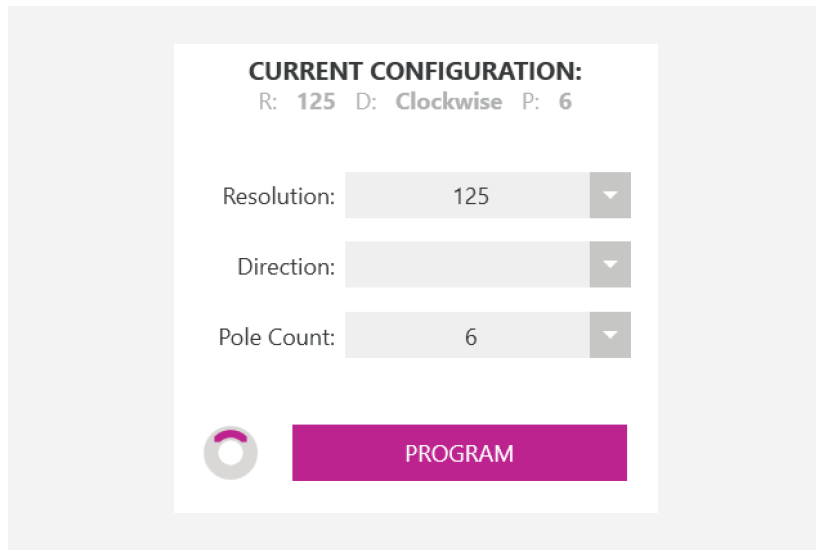
Waveforms Card

Diagnostics Card

The screenshot displays the AMT Viewpoint software interface with the following components:

- Header:** "AMT VIEWPOINT" on the left and "HELP" on the right.
- Encoder Overview Card:** Shows "AMT3135" with firmware "0x15" and datecode "3518". Includes an image of the encoder and a link to the "Encoder Datasheet".
- Current Configuration Card:** Displays "CURRENT CONFIGURATION:" with settings: Resolution: 125, Direction: (dropdown), Pole Count: 6. Includes "PROGRAM" and "ALIGN" buttons.
- Alignment Card:** Shows three buttons labeled "U", "V", and "W", with "W" highlighted in purple. Includes an "ALIGN" button.
- Resource Card:** A vertical list of links: "AMT Landing Page", "Viewpoint User Guide", "Mounting Instructions", "CUI Insights Motion Blog", "Resource Library", and "Technical Support".
- Diagnostics Card:** Features a large dashed circle with a downward arrow and an "ACQUIRE DIAGNOSTICS" button.
- Waveforms Card:** Shows "QUADRATURE" and "COMMUTATION" tabs. Displays waveforms for channels Z, A, and B. Includes numerical values: I: 0.72, P: 1.44, T: 2.88, S: 0.72. A note states "Readings are in Mechanical Degrees".
- Footer:** "RECONNECT" button, "CUI Devices © 2023 All Rights Reserved", and system icons (moon, sun).

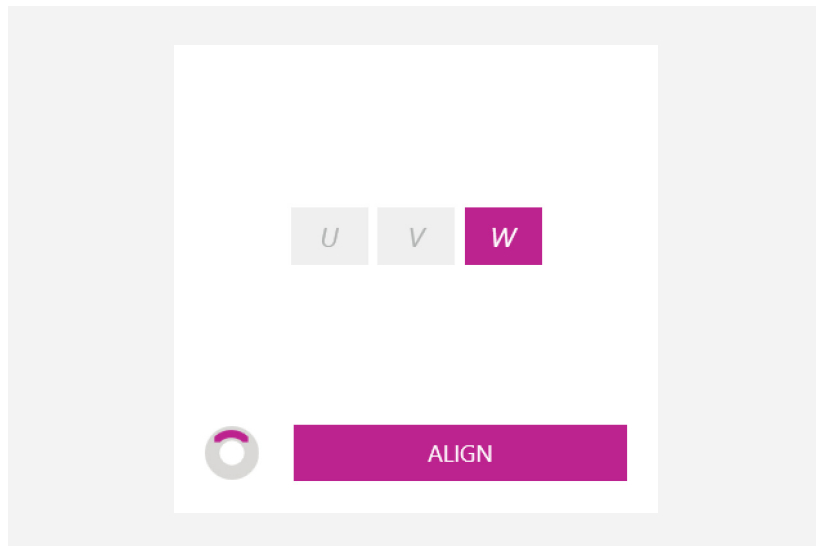
AMT31 & 33 SERIES



1 Current Configuration Card

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.



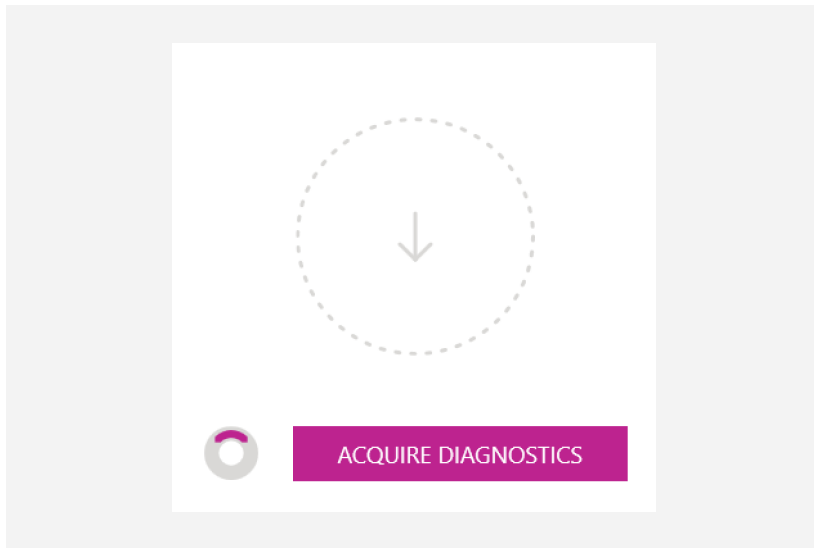
2 Alignment Card

When an AMT31 or AMT33 encoder is loaded into the AMT Viewpoint, the current U/V/W signal states are loaded onto the alignment card. Note that these values do not update in real time but are only loaded during connection and after the encoder programs and aligns.

Typically when aligning an encoder the user must go through a tedious installation process to accurately align the mechanical disk. The AMT encoder is unique in that its index can be set digitally. With the push of a button (or more accurately, the delivery of a serial command), the encoder can be instantly aligned to its current position.

[continued]

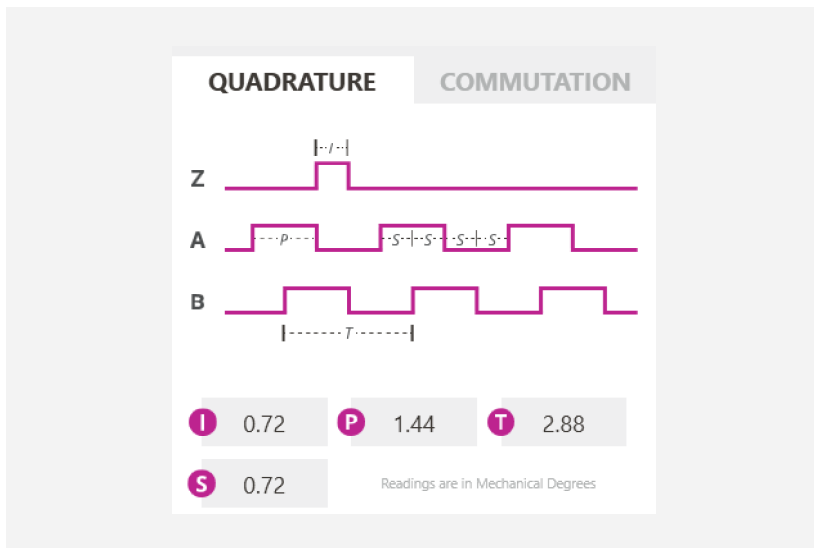
AMT31 & 33 SERIES



To align an encoder using the AMT Viewpoint, simply press the “ALIGN” button. This action will only take a second. It is finished when the status circle appears completely green. The zero position is now stored in the encoder’s memory and will remain there even after power has been removed. The U/V/W status boxes will update with the newly aligned position.

3 Diagnostics Card

CUI Devices’ encoders allow for the extraction of diagnostic information for quicker field failure analysis. To gather diagnostics from an encoder, click “ACQUIRE DIAGNOSTICS” and wait for the data to be retrieved.



4 Waveforms Card

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

www.cuidevices.com/contact

The AMT31 and AMT33 encoders allow for multiple resolutions to be selected. This card calculates the various timing values for each resolution. Select a different resolution to adjust the values.

Thank you for downloading the AMT Viewpoint™.

If you have any questions, you can contact us at: www.cuidevices.com/contact