We are excited to share with you the latest update to our Motion Analyzer sizing tool. This new release brings a brand new redesign of our Profile Editor to make it even easier to size and select your optimized Motion solutions.

We have also made a series of usability and performance enhancements to continue to improve your sizing and selection experience. You can try the latest version of Motion Analyzer yourself at https://motionanalyzer.rockwellautomation.com
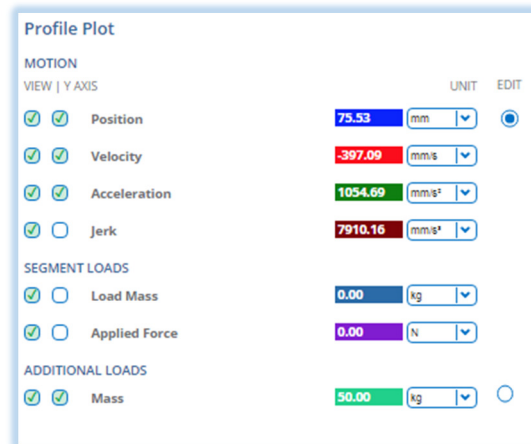
New Profile Editor -

The new Profile Editor has been designed to bring together all needed functionality into one screen using super-imposed motion graphs as well as full screen width settings for better visibility. The new Profile Editor uses a segment based approach to building motion profiles complete with Accel/Decel, Cruise/Dwell, Index and CAM segments. In addition, load segments including Mass, Friction, external forces, etc. can be added in conjunction with Motion segments or independently for added flexibility.
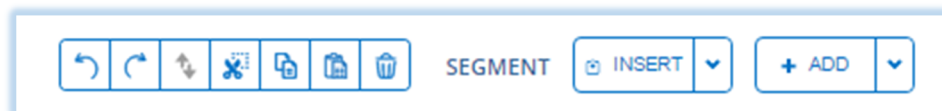

The New Profile Editor

The new Profile Editor supports an array of zooming and panning functions using the mouse scroll and clicking actions to facilitate validation of motion profiles. A mouse double-click resets the plot to its original position and scaling for ease of use.

Controls on the top left size of the screen allow users to select which graph combination to display as well as which corresponding Y-axis to view. Values of each profile are constantly displayed when users hover over the main profile plot.
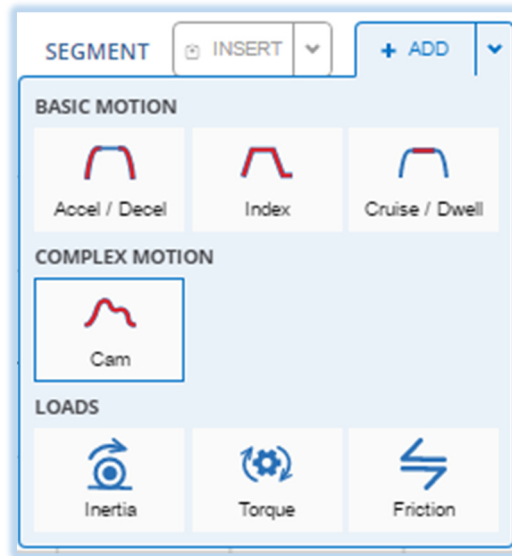

Hover values of each profile and graph and Y-axis selectors

The controls of the main plot allow users to manipulate segments individually using Cut/Copy/Paste as well as Undo/Redo functionality. The "ADD" control appends segment to the end of the plot while the "INSERT" control is used to insert a segment before a selected one. This feature is particular useful when a segment needs to be inserted in the middle of a plot to avoid deleting and recreating segments.
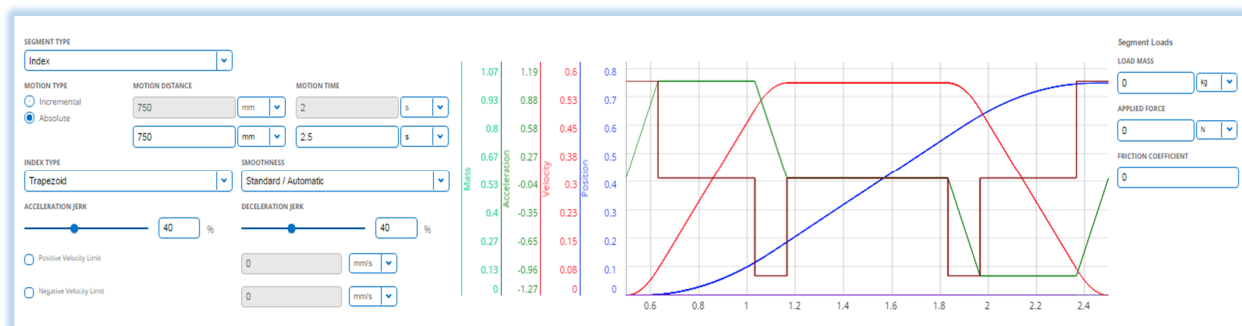

The "ADD" and "INSERT" commends create the same type of segments and are divided into basic segments: Accel/Decel, Index and Cruise/Dwell segments; Complex Motion segments: CAM tables as well as additional loads, which change contextually depending on the type of profile being built (Rotary vs Linear).

ADD and INSERT segments
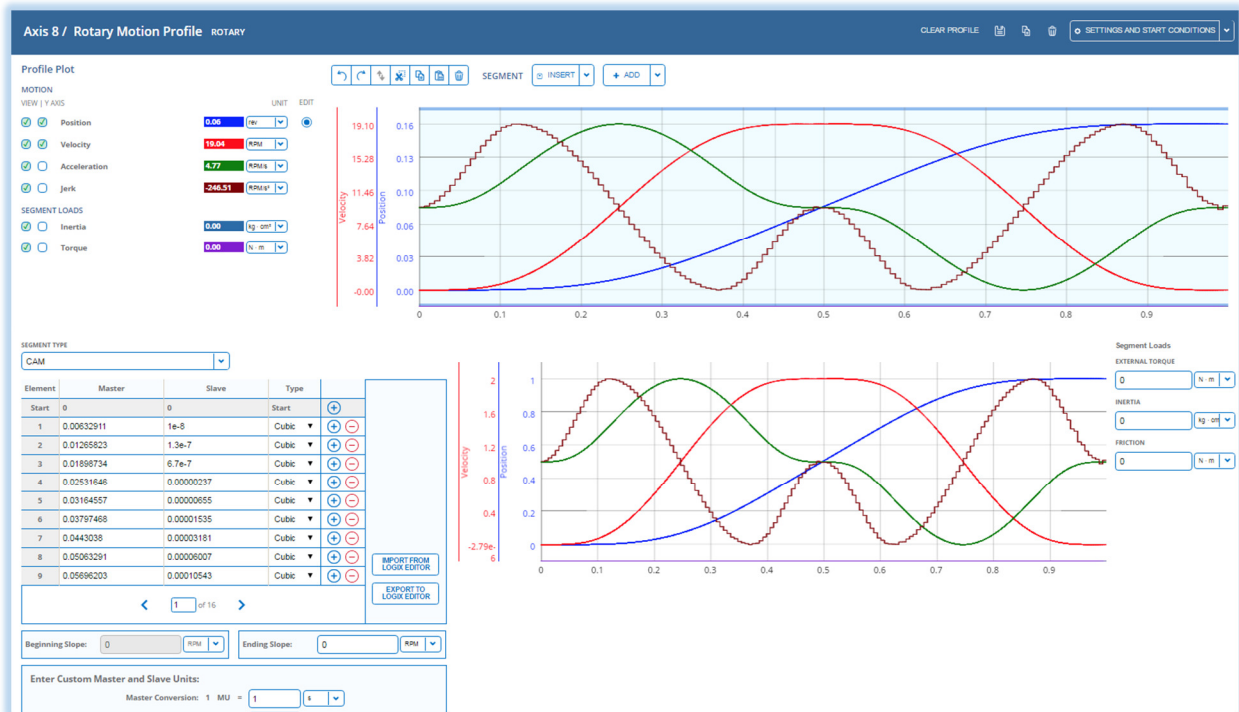
The Segment editing pane:

The segment editing pane allows users to edit and view segments in real time. The segment graph can be zoomed in independently from the main plot. Segment types (Accel/Decel, Index, Cruise/Dwell, etc.) can be changed directly from this view. The right hand side controls allow users to enter external factors such as load mass, friction coefficient, inertia, torque or external forces relevant for the current segment. Changes made to the segment are automatically applied to the main plot in real time.

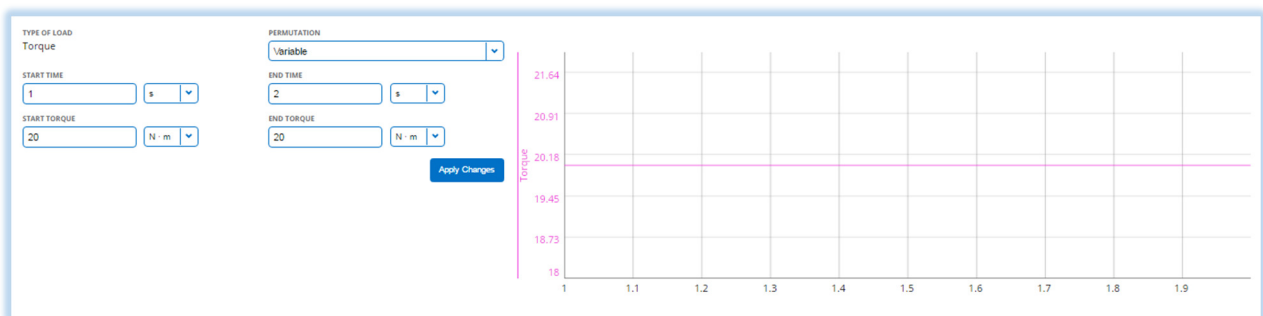*Segment editing pane*

The CAM editor:

The CAM editor allows users to enter or import/export CAM tables to and from LogixDesigner©. CAM segments can easily be interleafed with other basic segments or used independently.

The CAM editor

Additional Load Segments pane:

Additional Load segment can be added independently of Motion segments. Loads can be specified as 'Constant', in which case they pan the complete Motion profile or 'Variable'. In the case of the latter, users can specify initial and end conditions for time and load values.
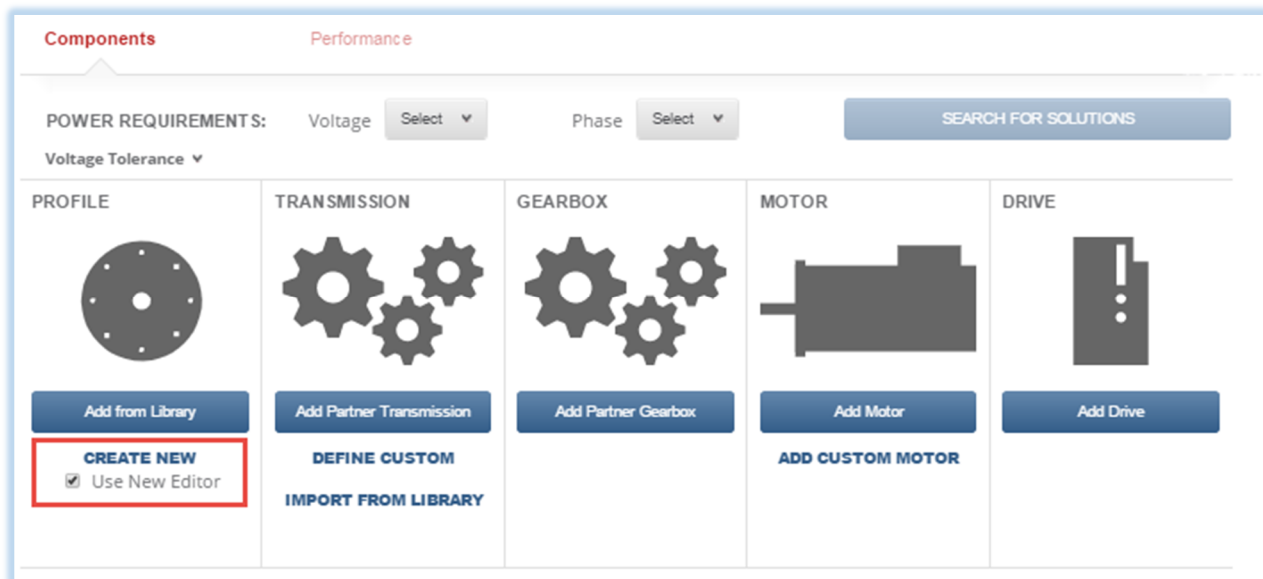

Additional Load Segment edit pane

Switching between editing the main motion plot and additional load segments can be done via the main plot left hand side controls.

Switching between editing Motion and Additional Load Segment plots

Previous versus New Profile Editors:

For each Axis or library item, users have the choice to use the new or older profile editors. Leaving the "Use New Editor" box checked will ensure the use of the new Profile Editor when building new motion profiles. Users can revert to the older editor by unchecking the box. Preferences for the default editor to use can be selected in the user preferences menu.
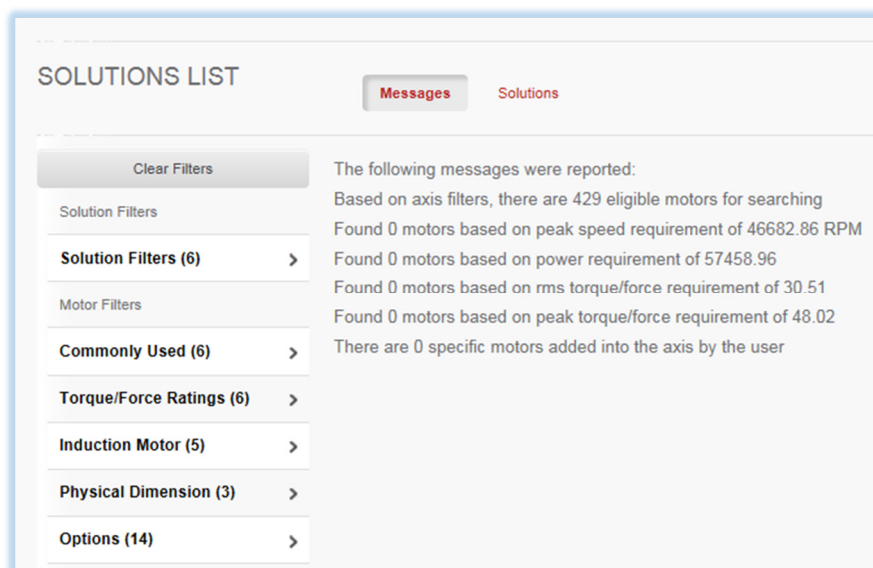

Selecting the Profile Editor

Caution: at this time, newer motion profiles are not compatible with the ones created in the older editors. This means that profiles created in the newer editor will not be available to use with the older one. Similarly, the current release does not support viewing or editing motion profiles created with the older editor within the new one. However, future releases will allow users to do that. Other limitations of the

new editor include the lack if import/export functionality as well as the use of Application Templates. If either of these functions are needed, then the use of the current profile editor is advised.

Other Recent Changes -

Other recent changes include Messages during Solution Search. This functionality allow you to view information when searching for solutions and is especially useful when the search fails to find results. This feature gives users indications on what potentially should be adjusted to find solutions. Examples include motor or gearbox too high speed or torque requirements, etc.

Messages during Solution Search

Additional Products:

- **Powerflex® 755T Drives**: The PowerFlex® 755T drives were designed to provide harmonic mitigation, regeneration and common bus solutions that help reduce energy costs, add flexibility and increase productivity. These are the first drives to offer TotalFORCE™ technology which uses several patented features that were developed to help optimize your system. These drives also offer the advantage of a modular design for fast and easy installation and maintenance. This efficient design provides compact modules that can be easily removed and serviced – and also allows you to wire the drive just once. Power wiring can stay connected while a unit is rolled out for repair.

- **Kinetix® VPC Continuous-duty Servo Motor** with Interior Permanent Magnet Technology: Reduces wiring and maintenance time with a single cable for power and feedback. Includes interior permanent magnet technology which provides lower torque ripple for a smoother performance and more efficiency at higher speeds in continuous-duty applications. Meets IE4

standard for energy efficiency, which reduces energy usage and costs. Includes attached fan to direct air through cooling channels, which increases continuous torque. Offers high resolution digital encoders for improved machine control.

- **Sicme Motori BQ Asynchronous Servo Motors**: The VECTOR-SPEED three-phase motors have been especially designed and manufactured to satisfy the need for high performance modern motorizations which require the use of variable speed motors controlled by an inverter. The main feature of these motors resides in the laminated stator pack, which carries out the functions of the frame and integrates the air circulation system.
- **Camco RDM Rotary Indexes:** The RDM Series Index Drive is ideal for rotary dial applications with features including large output surface, large center thru hole, low profile.

Summary of known issues and limitations –

- Missing import/export functionality in new profile editor
- Missing Application Templates with new profile editor
- Existing Motion profiles cannot be opened in newer profile editor and vice versa

Have ideas? Need Help?
As always, we love hearing from you to find out how we can make your sizing and selection experience better. We also want to make sure you are able to quickly and easily build your systems and find the information you need. We are constantly folding suggestions from you into our development plans. You can email us at motionanalyzersupport@ra.rockwell.com with comments, suggestions, bug reports or requests for help.

Tell us what you think:
How are we doing? Please fill in a quick survey to let us know how we can make this tool even better:

https://www.surveymonkey.com/r/93RN88M