

Delta Motion Adds Trapezoid Waveform Command for Testing Applications

Battle Ground, WA – July 17, 2026 – Delta Motion has added a new Trapezoid Waveform Command to its RMC Motion Controllers, providing machine builders and test engineers with an efficient method for generating any type of trapezoid, triangle, sawtooth, and square wave motion profiles for both position and pressure or force control applications. This complements the sinusoidal and curve waveforms already offered by the RMC. Together, these commands allow engineers to select the waveform best suited to their application, from smooth sinusoidal motion to custom profiles, to sharp-edged cyclic profiles with adjustable rise, high, fall, and low segments.

Example Waveform	Shape
50% Duty-Cycle Square Wave	
Isosceles Triangle Wave	
Isosceles Trapezoid Wave	
Sawtooth Wave	

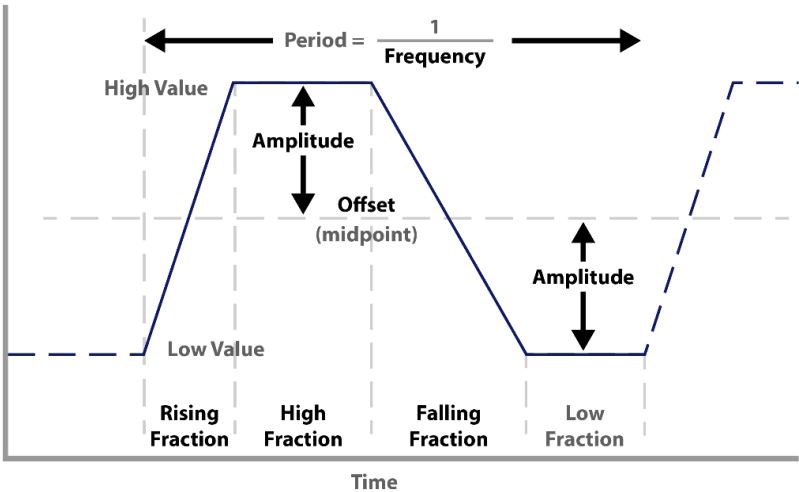
Especially useful in testing application, the Trapezoid Waveform Command generates continuous cyclic waveforms directly within the RMC controller, eliminating the need to program individual motion segments or create custom waveform generators in a PLC. The waveforms are infinitely configurable using parameters including amplitude, offset, frequency, and rise time, high time, and fall time.

Unlike traditional motion sequences, waveform parameters can be modified while the command is running. Amplitude, offset, phase, and waveform shape may all be changed on the fly without stopping the motion, allowing operators

to adjust test conditions during operation.

The command is available for both position control and pressure or force control. This allows engineers to generate cyclic position profiles or cyclic force profiles using the same command structure and programming methods.

For force-controlled applications, the waveform command supports adaptive amplitude control. Rather than commanding a fixed output, the adaptive control algorithm automatically adjusts waveform amplitude to maintain the requested peak force as system conditions change. This capability is particularly useful in fatigue testing, material testing, durability testing, and other applications where specimen stiffness or system dynamics vary over time.



The Trapezoid Waveform Command also supports changing the waveform gradually over time. For example, the duty cycle of a square wave can be adjusted over a certain time or a number of cycles. The entire shape can be changed, such as a triangle changing to a sawtooth over a specified number of seconds or cycles.

Waveform generation is performed entirely within the RMC Motion Controller, allowing deterministic execution independent of PLC scan times or network update rates. This reduces application complexity while providing highly repeatable cyclic motion for testing and automation systems.

"Delta's controllers are increasingly valued for custom testing applications. Customers often find the cost to be a fraction of other high-end solutions, and the RMC controllers much easier to adapt to special requirements," said Steve Nylund, CEO of Delta Motion. "Many of our product enhancements come directly from customer feedback, and the Trapezoid Waveform Command is an example of this, a practical feature that simplifies application development with our RMC Motion Controllers."

Typical applications include fatigue testing, hydraulic and electromechanical material testing machines, component durability testing, production cycle simulation, actuator characterization, and other applications requiring precise repetitive motion or force control.

The Trapezoid Waveform Command is available on all RMC75, RMC150, and RMC200 Motion Controllers. Controller setup, tuning, and programming are performed using Delta's RMCTools software.

For additional information, including command reference documentation and setup instructions, visit Delta Motion's RMCTools Help, contact support@deltamotion.com, or call +1 360-254-8688.

About Delta Motion

For over 40 years, Delta Motion has been a leading manufacturer of motion controllers and industrial products. Delta's RMC Motion Controllers are found in servo-hydraulic and servo-electric closed-loop control in a wide array of single and multi-axes control and testing applications around the globe. For more information contact Delta Motion at +1 (360) 254-8688, email technicalsales@deltamotion.com, or visit deltamotion.com.

Contact Information

For more information about RMCTools and the new Trapezoid Command, please contact:

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