Product Release Notice

KINGSTAR 3.5

General Availability Release Date

August 24, 2018

Product Overview

KINGSTAR products are designed for industrial machines requiring motion control and positioning systems. KINGSTAR's all-software approach sets it apart from other machine control solutions.

Using the EtherCAT standard; the power of Industrial PCs; and the Windows operating system, enhanced by IntervalZero's RTX64 hard real-time software that transforms Windows into a real-time operating system (RTOS), you can create software-only, PC-based machine controllers that lower the costs of industrial machines while delivering excellent precision and performance.

There are two product lines: **KINGSTAR Motion** and **KINGSTAR EtherCAT.**

- **KINGSTAR Motion** is a complete software solution that creates PC-based machine controllers with premium precision and performance.
- **KINGSTAR EtherCAT** provides support for CANopen over EtherCAT and simplified configuration of EtherCAT networks.

KINGSTAR Soft Motion

New Features

- Integrates LogicLab and PLC Runtime powered by AXEL into KINGSTAR, allowing for simplified application design and development. [KS-753, KS-750]
- Extends support to allow KINGSTAR EtherCAT applications to run on KINGSTAR Motion Runtimes. KINGSTAR-EtherCAT-developed applications can be easily upgraded to KINGSTAR Motion so developers can use provided motion functionality. [KS-748]
- Provides a Control Panel to start and stop the KINGSTAR Subsystem. [KS-791]

- Adds functionality to the .NET Class interface to Write Control Mode Asynchronously. [KS-644]
- Adds functionality to the group motion for Jog and Inch. [KS-657]
- Provides APIs to allow for manual setting of linked devices. [KS-764]

Updates & Resolved Issues

- Resolves an issue regarding motion commands not always receiving the previous commands last moving direction. [KS-777]
- Allows the position and distance of a single axis to be continuously updated. [KS-742]
- Improves handling of devices that fail to change the mode of operations (MOP) while running. [KS-784]
- Resolves an issue regarding MC commands not working correctly for simulated drives. [KS-766]
- Resolved issues regarding AbortHoming not working for homing slave mode in the Real-Time, Win32, and .NET API interfaces. [KS-798]
- Resolves an issue regarding homing when using SensorLimit mode and functions SetMaxSensor and SetMinSensor. [KS-838]
- Resolves an issue regarding over-shooting a target position when calling a group halt or stop during deceleration. [KS-755]
- Resolves an issue regarding slave homing not working correctly after the first successful call. [KS-824]
- Resolves an issue regarding alias indexes be set to values outside the index range. [KS-846]
- Resolves an issue regarding MC_SetOverride values for AccFactor and JerkFactor to be set to zero. [KS-778]
- Resolves an issue regarding the group state not changing after an axis motion error or wrong axis state occurs while running group motion. [KS-803]
- Resolves an issue regarding MC_GroupHalt not being able to stop all axes in a group. [KS-857]
- Resolves an issue regarding MC_GroupHalt not stopping the group's motion after the group is disabled. [KS-843]
- Resolves an issue regarding an incorrect status return when issuing a MC_GroupEnable command while a group is in a GroupErrorStop state. [KS-761]

- Resolves an issue regarding group axes moving in a non-tangential direction when calling group's Halt or Stop during deceleration. [KS-850]
- Resolves an issue regarding MC_Stop and MC_GroupStop being unable to stop a grouped axis that has received a single axis move command. [KS-866][KS-868]
- Resolves an issue regarding the .NET API interface generating an exception “Index was outside the bounds of the array” when using the method ConfigLinkedDevice in class Subsystem.EtherCATLink when configuring a CANopen slave connected to a CANopen master. [KS-789]
- Resolves an issue regarding an out-of-range exception occurring when calling startup SDO commands during manual setting up of devices. [KS-816]
- Resolves an issue regarding GetServoStatus, in the RTAPI interfaces returning incorrect status. [KS-823]
- Adds homing mode to the Tuning Console’s Axis Configuration section. [KS-769]
- Resolves an issue in the .Net API Interface Sample regarding UI controls for I/O modules becoming unavailable after clicking start. [KS-763]
- Resolves an issue regarding an error occurring on start of the .NET Class Sample. [KS-815]
- Incorporates RTX64 3.4. [KS-813]
    - Support for Windows 10 April 2018 Feature Update (1803)
    - Support for Intel Advanced Vector Extensions 512 (AVX-512) instructions

KINGSTAR EtherCAT

Updates & Resolved Issues

- Provides APIs to allow for manual setting of linked devices. [KS-764]
- Adds additional checks for maximum memory size and objects to download during auto-configuration. [KS-796] [KS-821]
- Resolves an issue regarding Scanbus failing on old hardware if it can't read the alias address. This issue would cause an access violation during shutdown of the KINGSTAR subsystem. [KS-765]
- Resolves an issue regarding distributed clocks not being correctly synchronized when KINGSTAR EtherCAT is frequently stopped and restarted. [KS-801]

- Resolves an issue regarding the number of DC packets available to maintain synchronization when using a slow cycle time, such as 2 milliseconds. [KS-837]
- Resolves an issue regarding KINGSTAR generating an exception if a module is plugged in while it is running. [KS-800]
- Resolves an issue regarding KINGSTAR failing to restart if the cable is unplugged while it is running, [KS830]
- Incorporates RTX64 3.4. [KS-813]
    - Support for Windows 10 April 2018 Feature Update (1803)
    - Support for Intel Advanced Vector Extensions 512 (AVX-512) instructions

Hardware Support

KINGSTAR Motion & KINGSTAR EtherCAT have added out-of-the-box support for the following new hardware.

Servo drives

- Beckhoff EL7201-0011 [KS-786]
- ESTUN ProNet-EC [KS-767]
- Festo CMMP-AS-C2-3A-M3 [KS-783]
- Festo EMCA [KS-806]
- Han's Robot D-Module Series Modular [KS-737]

Stepper drives

- TPM STP-K121-KIT [KS-685]

EtherCAT I/O modules

- Beckhoff EK1122 EtherCAT junction [KS-772]
- Inovance AM600 [KS-794]
- TPM 207-D240-NX, 207-D204-XN, 207-D222-NN, 207-A202F, 207-A202FH, 207-A203F, 207-A204F, 207-A220FID, 207-A220FD [KS-758]

Availability

KINGSTAR 3.5 Soft Motion and KINGSTAR EtherCAT are available beginning August 24, 2018 through Partners and by contacting KINGSTAR Sales or (781) 996-4481. Evaluation Downloads can also be requested here.

We look forward to your comments and feedback. If you have any recommendations or wish to suggest any product enhancements, please contact Product Management.