

# Product Release Notice

## KINGSTAR 4.3

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### General Availability Release Date

September 23, 2022

### Product Overview

KINGSTAR is an all-software, complete “plug-and-play” PC-based Machine Automation platform for IoT and Industry 4.0. Key pre-tested and pre-integrated industrial machine components include software-based motion control, machine vision, programmable logic controller (PLC) and the industry’s only plug-and-play EtherCAT master that auto-discovers any vendor’s EtherCAT drive, IO or device and auto-configures the EtherCAT environment at startup. Built on the EtherCAT standard and supported by a real-time 64-bit Windows operating-system (RTOS) from IntervalZero, KINGSTAR empowers engineers to design, develop and integrate machine control applications or a system of controllers on a single Industrial PC. The KINGSTAR platform can replace all hardware with software-only motion controllers and machine vision positioning systems quickly and cost-effectively.

KINGSTAR allows developers to select only the functionality they need. KINGSTAR’s flexibility is provided through feature packages that allow you to grow your product at any time by adding functionality to the existing KINGSTAR Runtime.

Available KINGSTAR Runtime feature packages:

- Core packages for: 1, 2, 3 or 7 KINGSTAR cores
- Motion packages for: Point to Point, Synchronization, Blending, and Kinematics
- Axis packages for: 8, 16, 32 or unlimited axis
- High speed timer
- Multiple masters
- Hot connect
- Cable redundancy
- Programmable Logic Controller (PLC)

## New 4.3 Features and Updates

- Adds Generic and Modbus communication function blocks to the KINGSTAR PLC.
  - Non-protocol connection over serial port
  - Socket connection over Ethernet
  - Modbus RTU client
  - Modbus TCP client
- Adds support for all point types in Poly5 interpolation: stop, velocity, acceleration, and move.
- Expands the .NET Class to support InchGroup and JogGroup.
- Adds 3-axis delta robot (120-120-120) and SCARA robot kinematics transforms.
- Adds PLCopen group motion commands MoveDirectAbsolute and MoveDirectRelative.
- Adds Get, Set, and Wait for Motion Triggers that can be added to single axis and group queues.
- Adds a RegisterCallBackEx function to support setting an ideal processor for the callback thread to run on.
- Adds a Standard Robot Command Interface (SRCI) for static spline.
- Adds support for shutdown handling in KINGSTAR applications.
- Usability improvements were made to ESI Import Tool:
  - redesigned the layout and user interaction workflow to improve user experience.
  - improved the underlying architecture for how the tool handles ESI data processing and persistence of data.
  - handles checking for mutually exclusive mappings for PDO Assignments.
  - allows for manual configuration of modules.
- KINGSTAR PLC is upgraded to LogicLab 5.20, which includes the following updates:
  - VAR\_EXTERNAL can now be used in functions and function blocks.
  - IFDEF directive can now use complex conditions (AND, OR, NOT).
  - Support for the PVOID pointer type.
- Includes RTX64 4.2.1.
  - Adds support for 12th Gen Intel® Core™ processors.

- Adds support for Intel® Thread Director (ITD) in the Subsystem to capture a thread's ideal core.
- Adds support for Intel® Control-flow Enforcement Technology (CET), which allows RTX64 to run on 12th Gen and 11th Gen (Tiger Lake) Intel® processors. (10706)
- Adds support for Windows 10 Update Version 2105 (21H1).
- Adds support for Windows 11 version 21H2.

## New Hardware Support

KINGSTAR has added out-of-the-box support for the following new hardware. See the *KINGSTAR Supported Hardware* document for a complete list of supported hardware.

Stepper drives:

- MOONS' STF06-ECX
- MOONS' STF-ECX-H series
- MOONS' SSDC06-ECX-H
- TROY SDR-D2-60

I/O modules:

- Dinkle GFE-BR01, GFE-BR02, GFE-DI01, GFE-DI02, GFE-DQ01, GFE-DQ02
- Vitrox iD5016-1B, iD5116-1B

## Resolved Issues

For a list of all resolved issues addressed in this KINGSTAR 4.3 release, please refer to the *Product Release Notes*.

## Availability

KINGSTAR 4.3 is available beginning September 23, 2022, from the [IntervalZero Customer Center](#) or by contacting Sales: [sales@intervalzero.com](mailto:sales@intervalzero.com) or (781) 996-4481.

We welcome your comments and feedback. If you have any recommendations or wish to suggest product enhancements, please contact [Product Management](#).