Industry-Leading High Performance 10-Gigabit Motion Controller

Why iX?

There are several reasons and advantages:

- Precision Motion and IO Control
- Very High Data Transfer Speed
- Simple and Robust
- Scalable Solution
- Optical Communication, immune to Electro-Magnetic Noise

What is SALINK?

SALINK is a real-time network protocol, originally developed for Sodick Machines. SALINK stands apart in delivering deterministic and very fast real-time communication performance.

KSMC-iX is one of the **KSMC® Motion Controller** Series advanced motion controller lineup, offering high-performance, PC-based control solutions. Built with a modular, scalable architecture and powered by a Real-Time Operating System, the iX series enables precise and reliable motion control across various industrial applications including EDMs, machining centers, 3D printers, and more.

- ***Supports up to 32 motors and 8 interpolated axes***
- ***Fiber optic communication (SALINK) with 10Gbps data transfer***
- ***Proven technology in 50,000+ Sodick machines worldwide***

Software and Hardware Packages

The KSMC-iX is available with optional software to add on top of the Motion Controller.

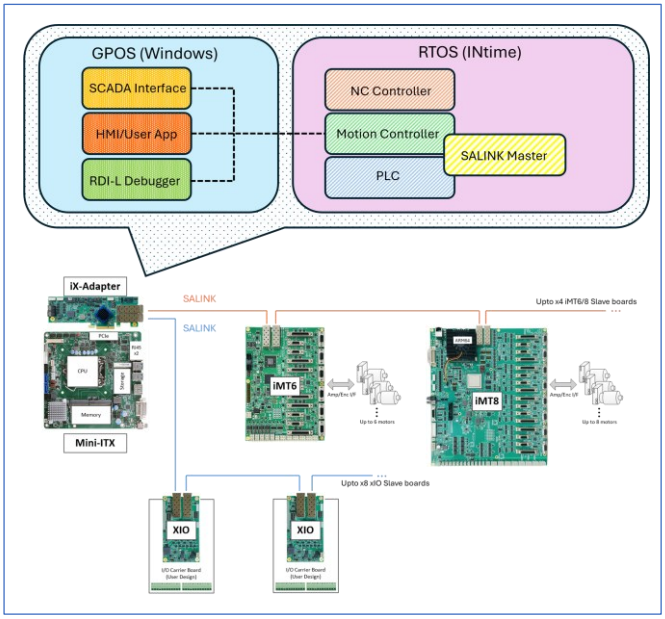
- SALINK Communication Master
- Motion Controller Library
- RDI-L Motion Debugger
- PLC* (optional)
- NC Controller (optional)
- HMI Builder (optional)
- User Application (optional)
- SCADA/OPC-UA Interface (optional)

* Under development

SALINK Communication Protocol

SALINK is a custom, high-speed communication protocol developed for the KSMC-iX Motion Controller. It utilizes fiber optic cables and 2x SFP+ modules to enable rapid data transfer at 10 Gbps between the controller's multiple boards.

Software and Hardware of the KSMC-iX System



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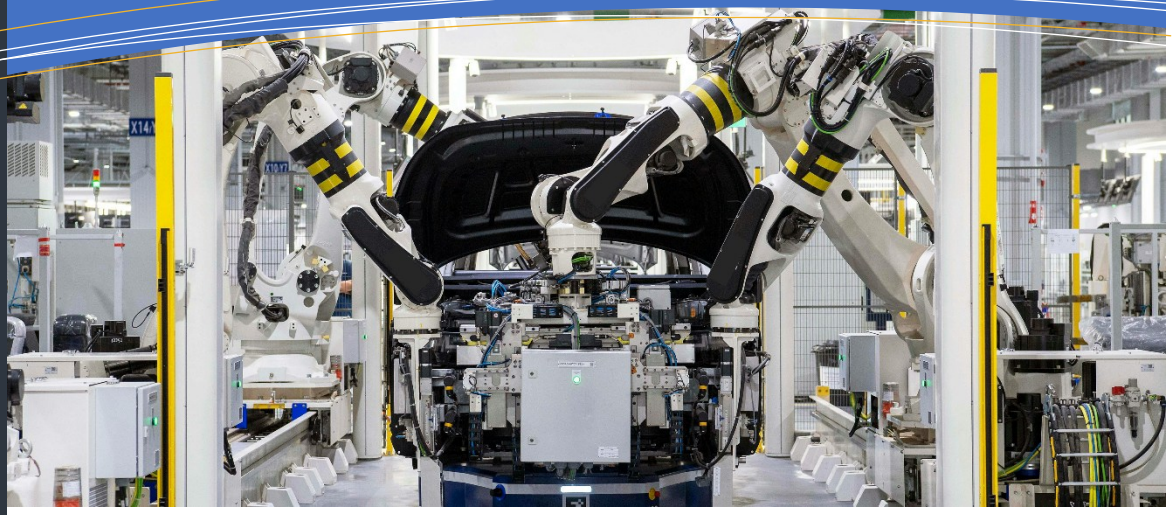
Be Precise and Productive with KSMC-iX



Sodick

SODICK FAMILY

We opened our office in San Jose, CA, in the middle of Silicon Valley, back in 2000 as an R&D subsidiary of Sodick Co., Ltd.

MOTION SPECIALISTS

We have developed several Motion Controllers that have proven its stability, flexibility, and reliability in diverse types of Sodick machines (EDM, MC, 3DP, IMM) for over 20 years.

KSMC® Motion Controllers

- KSMC
- KSMC-SILINK
- KSMC-M4LINK
- KSMC-MALINK
- KSMC-A4
- KSMC-IX
- KSMC-ECAT

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Motion Key Features

- Up to 32 motors
- Up to 8 interpolated axes (export control may apply)
- Up to 4 Coordinate System
- Motion Planner per each Coordinate System
- Motion-Axes association
- PID and Modern Control Theory
- Disturbance Observer and Adaptive Control
- Notch Filter
- User Program (Sequential PLC & Periodic PLC)
- Macro Variables (settings & statuses)
- User Defined I/O Data
- Various Motion Modes (Jog, Spline1/2, CW/CCW/ PVT, Rapid, Handwheel…)
- Small Segment Time (500usec) and PDO cycle (250usec with 32 motors)
- Data Gathering and Plotter

Motion Controller

For over 20 years, our in-house Motion Controllers have been used in more than 50,000 Sodick products. These include Sinker & Wire EDMs, Machining Centers, 3D Printers, and Injection Mold Machines. Our Motion Controller has proven its stability and flexibility with a variety of features and gives users flexibility in axis and motor movement. The KSMC-iX Motion Controller runs on RTOS and controls the motor's position by directly sending the data on the SALINK bus. It also provides a unique scripting program (Sequential PLC and Periodic PLC) that gives more flexibility to users in customizing motor and axis movement.

NC Code Parser and Executor (MaCH)

To control CNC machines, NC programs are widely used. NC program syntax was developed by EIA in the early 1960s and was standardized by the ISO in 1980 as RS274D / ISO6980. In KSMC-iX, there are optional modules named "MaCH" that are available to turn the system into an NC controller. These modules are tightly coupled with the Motion Controller.

PLC *

The Programmable Logic Control (PLC) language is standardized by the IEC (IEC 61131-3). This specifies the syntax and semantics of a unified suite of programming languages for programmable controllers. This suite consists of two textual languages, Instruction List (IL) and Structured Text (ST), and two graphical languages, Ladder Diagram (LD) and Function Block Diagram (FBD). Additionally, a set of graphical and equivalent textual elements named Sequential Function Chart (SFC) is defined for structuring the internal organization of programmable controller programs and function blocks. Configuration elements are provided which support the installation of programmable controller programs into controller systems.

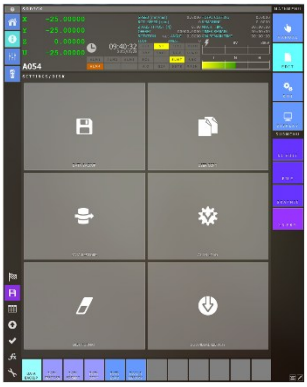
KSMC-iX provides the capability and flexibility in programming motion by supporting the standardized PLC.

* Under development

Proven Stability and Reliability with Sodick machines over 20 years

HMI Development Tool (SmART)

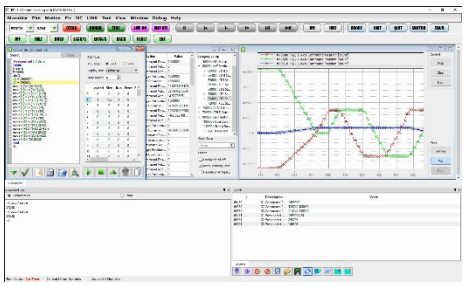
Development of an HMI is a time-consuming task. To help users develop the HMI faster and easier, we provide an HMI development tool that provides an effortless way to develop the HMI without coding. This suite of software includes SmART-B, SmART-I, and SmART-L. SmART-B is an HMI design tool that saves information of visual elements, such as buttons and labels, into an XML. SmART-I reads the XML and creates the components at runtime. SmART-L provides support for multiple languages. For more information about SmART, please refer to the SmART manuals.



RDI-L

Customizing motion control according to the user's requirements is critical and important. For example, move the X-axis to a given position at a given velocity, but the axis velocity and acceleration should not go above the max value set by parameters. For the X-axis motor to follow the reference and command positions, the gains (position/velocity/current) must be well tuned. RDI-L (Realtime Debugging Interface for Link products) helps with these customizations. RDI-L features include:

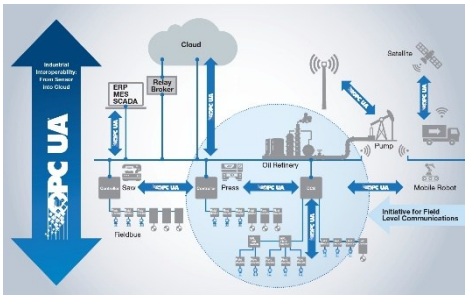
- Setting parameters.
- Data Gathering & Plotting.
- Monitoring Statuses (Watch Windows).
- Edit/Download/Upload/Run PLC programs.
- Gain Tuning in different motion patterns.
- Firmware Update.
- Execute NC programs.



SCADA Interface (OPC UA)

KSMC-iX supports OPC UA, which serves as a standardized communication protocol that enables SCADA (Supervisory Control and Data Acquisition) systems to interface with various industrial devices and applications. The standardized nature of this interface allows SCADA systems to securely and reliably access real-time data, alarms, events from the KSMC-iX Motion Controller.

Source



TURNKEY SOLUTION

Give us detailed requirements & specifications and rest assured we can help with your developmental needs.

TECHNICAL SUPPORT

For any questions or inquiries, please contact us.

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Discuss Your Application: Contact Us Today!

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