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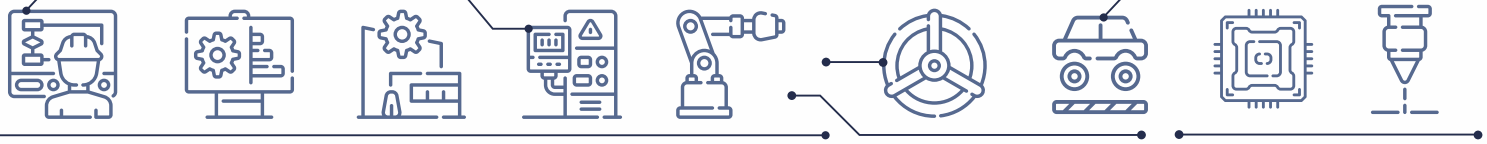
Your Automation expert



Contents

koenig-pa GmbH

EtherCAT

Motion

Automation

About us

Our mission

We create innovative products and solutions for industrial automation to help our clients to develop and improve their business.

Brief history

The company was founded in 1986. At the beginning of its activity, the company specialized in providing engineering services for installation and adjusting of technological equipment in chemical production.

In 2004, the company developed a new software platform fastCenter for creating industrial automation systems. For more than 15 years of cooperation, more than a thousand technological lines for the production of printed circuit boards of our key customer Atotech Deutschland GmbH have been equipped with multifunctional systems SCADA based on the fastCenter platform for monitoring, data acquisition and control of technological processes.

Since 2004, koenig-pa GmbH is a member of the **EtherCAT Technology Group** (ETG) — an international association of developers and manufacturers, which use EtherCAT technology. koenig-pa GmbH has become one of the leading experts in this technology and has developed a line of software products to help developers to use EtherCAT in their solutions for automation and control systems.

In 2013, considering the growing role of robotics in major industries, as well as the high demand for independent software solutions, our company expanded the software product range with KPA Motion that implement motion control functions.

In 2018, the unique system, KPA Master Redundancy (patent No. US 10,102,163 B2), for protecting automated control systems from failures was developed. In case of a failure of the “active” master, the presence of “passive” masters in the EtherCAT network configuration allows to switch control to the “passive” master immediately without waiting for the end of the cycle and without losing data.

In 2020, our company introduced KPA Automation softPLC, a multi-tasking PLC programming environment based on the straton® PLC core. KPA Automation softPLC complies with PLCopen standards, supports ST, IL, FBD, SFC, LD programming languages in accordance with IEC 61131-3 standard and can be used on both small and industrial platforms with or without an operating system.

More than 500 customers in various countries of the world and various industries successfully use koenig-pa GmbH software products, solutions and electronic devices.

The company has an extensive network of resellers selling licensed koenig-pa GmbH software in such countries as China, India, Italy, South Korea, USA and Japan.

The existing partner program allows customers to use koenig-pa GmbH software products in the optimal way as a part of well-proven systems and solutions from our hardware partners.

Our expertise

From the first days of our business, we strive to ensure that our products are in line with the latest trends in IT and industrial automation. For more than 30 years, we have managed to accumulate profound knowledge and experience in the following fields:

- Development of software products for various operating systems: Windows, INtime, Linux, Xenomai, QNX, RTX64, VxWorks, Integrity, FreeRTOS, Nucleus, ITRON, and others.
- Creation of industrial automation systems using equipment from the leading manufacturers: Beckhoff, Siemens, Nordac, Lenze, Ancosys, and others.
- Working with various industrial buses and networks: EtherCAT, CAN, PROFIBUS, Modbus, TCP/IP, and others.
- Use of processors, SoCs, microcontrollers, DSPs and FPGAs from industry leaders: Altera, Analog Devices, Atmel, Freescale, Intel, Texas Instruments and Xilinx.

Highly qualified specialists of koenig-pa GmbH are involved in international projects of various fields, including process automation, embedded system development, servo drive production, robotics, electronics, automotive, energy, and much more.

Our quality management system meets ISO standards and covers all our products and services. All company processes, from a product order to technical support, are managed according to our quality management system.

KPA EtherCAT Master

EtherCAT network control

KPA EtherCAT Master is a software stack, which corresponds to all EtherCAT Technology Group stan-dards and has numerous features, which can be used for developing of cost-optimized and powerful PLC on almost any platform (such as arm/arm64 or x86/x64) to control EtherCAT I/O produced by any vendor.

Benefits and key features

- **Meets EtherCAT Technology Group (ETG) standards**

  KPA EtherCAT Master can be delivered as standard or customized feature packages. Two standard packages are available according ETG.1500 standard: Class A (Standard package) and Class B (Basic package). Moreover, koenig-pa GmbH introduces Premium package, which integrates various additional features for creating innovative applications.

- **Available for numerous operating systems, as well as OS-less systems**

  KPA EtherCAT Master is available for numerous operating systems, including Windows, INtime, RTX64, Linux, Xenomai, QNX, VxWorks, FreeRTOS, ITRON as well as OS-less systems. Upon request, koenig-pa GmbH experts can adjust support for any operating system.

- **Hardware extensions for Xilinx/Intel FPGA (Altera) and Texas Instruments PRUSS Sitara CPU**

  Availability of IP Cores for Xilinx and for Intel FPGA (Altera) FPGAs, PRUss co-program for Texas Instrument Sitara CPUs (AM47x and AM57x) increases productivity and data processing efficiency. Implementation for AM6x is available upon request.

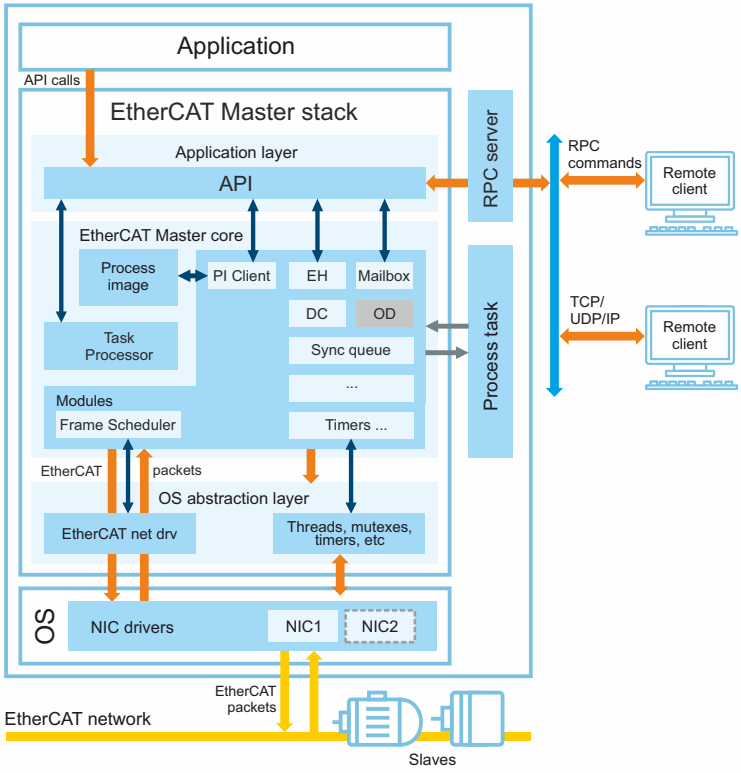
- **Online Configuration**

  KPA EtherCAT Master can configure bus on the fly without EtherCAT configuration tools. The Online Configurator module allows a user application to select slave's configuration and to switch between different configurations of the slave, for example, between position control of a drive and velocity control, or between bus configurations with a different number of slaves.

- **Process image logging for data transferring into analytic tools**

  Process image (PI) logger allows to collect real-time data for transferring to other levels without influence on real-time behavior of the control system. Data can be transferred to MATLAB, LabView (TDMS format), and any other analytic tools. LabView full integration is provided by the partner of koenig-pa GmbH – Ackermann Automation GmbH. Moreover, koenig-pa GmbH has designed a special Python extension, which allows to aggregate data into a file of any format, for example a CSV-file, for its further processing.

KPA EtherCAT Master Stack Architecture



Feature packages

Features	Basic	Standard	Premium
Process Data Exchange	●	●	●
Network Configuration	●	●	●
Mailbox support	●	●	●
CoE	●	●	●
FoE	●	●	●
Synchronization with Distributed Clock (DC)	○	●	●
DC support	●	●	●
Time distribution (Slaves synchronization)	●	●	●
Slave-to-Slave Communication	●	●	●
Explicit Device Identification	—	●	●
EoE	—	●	●
SoE	—	●	●
AoE	—	●	●
VoE	—	●	●
Continuous Propagation Delay compensation	—	●	●
Sync window monitoring	—	●	●
Synchronization of Master with Slaves	—	●	●

Feature Packs	Basic	Standard	Premium
FP External Synchronization	—	○	○
FP Cable redundancy	○	○	●
FP Hot Connect	○	○	●
FP Mailbox Gateway	○	○	●
KPA Extensions			
Data logger	○	○	●
Frame logger	○	○	●
PI Snapshot	○	○	●
Events handler	○	●	●
PI logger	○	○	○
CAN DBC driver	○	○	○
VCOM driver	○	○	○
Autoconfigurator	○	○	○
KPA Master redundancy	○	○	○
Optimized drivers and HW Extensions	○	○	○
Hardware timed send	●	●	●

● Included in the delivery set
— Not included in the delivery set
○ May be included in the delivery set

Custom Development

koenig-pa GmbH offers specific software development for customers who require additional support for integrating EtherCAT capabilities into their applications or solutions.

KPA EtherCAT Slave

Software stack for device development facilitation

KPA EtherCAT Slave is a software stack, which is developed to run on microcontrollers, CPUs, or DSPs with or without any operating system (OS) and is especially designed to minimize time to market for companies that want to be a part of dynamically increasing EtherCAT market.

Benefits and key features

- **Meets EtherCAT standards**

  KPA EtherCAT Slave stack supports all features defined in EtherCAT standards. Each new version of the stack is verified with the latest released and all internal versions of the EtherCAT Conformance Test Tool (CTT) due to koenig-pa GmbH is a member of Technical Working Group Conformance.

- **Portability**

  KPA EtherCAT Slave stack may be presented as a software stack with embedded Hardware Abstraction Layer (typically implemented through OSAL and driver part), which can be used for simple support of any EtherCAT ASIC and communication interface (PDI) between ASIC and a microcontroller.

- **Optimized memory usage for embedded platforms**

  Used RAM size depends on application design and the size of the Object Dictionary (OD). For example, in case of static OD usage (a build based on source code):

  RAM size:
  - >= 3 KB for Basic package
  - >= 8 KB for Standard package

  ROM (flash) size:
  - >= 55 KB for Basic package
  - >= 64 KB for Standard package

  Moreover, to minimize a final size of the application, KPA EtherCAT Slave stack may be customized by editing the configuration file, for example, it is possible to deactivate Mailbox EoE, Mailbox VoE and Mailbox FoE.

- **Support**

  In comparison with non-commercial or open source EtherCAT slave stacks, koenig-pa GmbH offers support for 1 year.

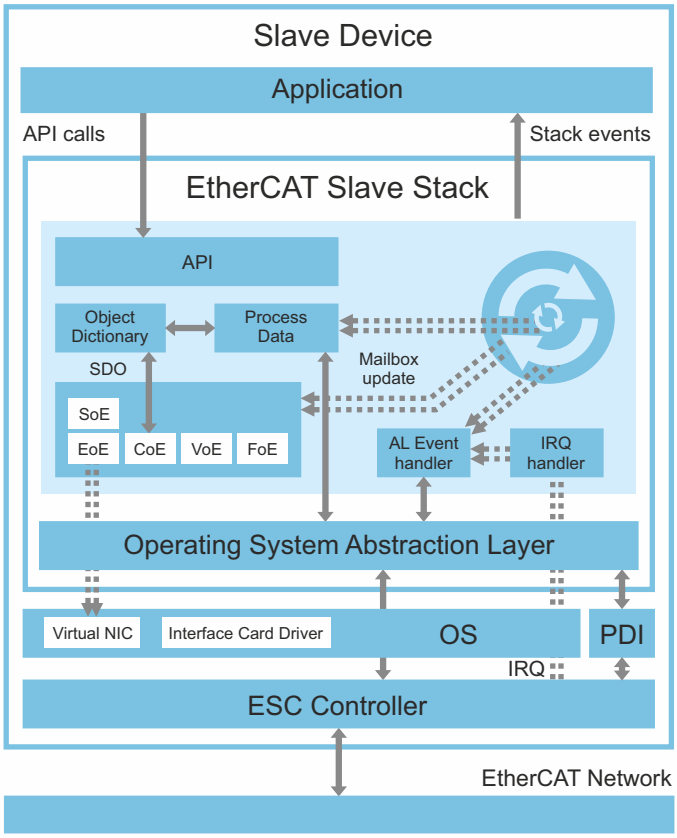
Feature packages

Standard

- Mailbox protocols: CoE, EoE, FoE, SoE, VoE
- Runtime generation and changing of the OD
- Adapted to operating system by using Operating System Abstraction Layer (OSAL)
- Virtual Ethernet card support for EoE (depending on OS)

Basic

- Mailbox protocol: CoE
- Static OD with pointer given from application
- With or without Interrupt Service Routines (ISR)



An EtherCAT Slave stack package may include a set of ready solutions for specific platforms and operating systems, such as:

Platforms:

- XMC4800 (Infineon)
- Microblaze (Xilinx)
- Sitara AM335x with ESC PRU (Texas Instruments)
- C2000 (Texas Instruments)
- STM32 (ST)
- NIOS II (Intel FPGA/Altera)

Operating systems:

- Linux (with/without RT-Preemption patch)
- Linux + Xenomai
- QNX
- No OS

KPA EtherCAT Studio

EtherCAT configuration tool

KPA EtherCAT Studio is a second generation of a user-friendly tool for EtherCAT bus configuration and diagnostics. This lightweight, high-performance standalone Windows application natively supports all the advanced features of KPA EtherCAT Master.

Benefits and key features

- **Meets EtherCAT Technology Group (ETG) standards**
  KPA EtherCAT Studio is compliant with EtherCAT Technology Group (ETG) standards and can create ENI (EtherCAT Network Information) files for EtherCAT masters from various vendors.

- **Extended Slaves Library**
  Slaves Library is a list of available ESI (EtherCAT Slave Information) files, which can be used to build up the project configuration. KPA EtherCAT Studio provides an opportunity to work with several Slaves Library collections, change an active collection by using a custom collection and manage Slaves Library view by setting user attributes for slaves.

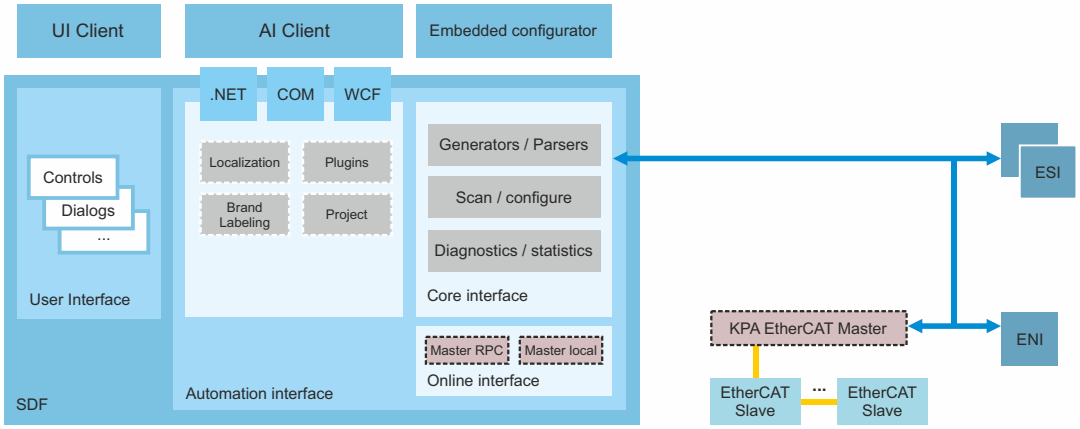
- **Several feature package modifications**
  KPA EtherCAT Studio is delivered as a Basic, Standard, Premium or customized feature packages depending on customer's demands.

- **Available for integration**
  KPA EtherCAT Studio can be integrated into any custom application using SDF API (.NET, COM) or .NET Remoting.

- **Customization of features in the package**
  In the delivered package, features can be activated or deactivated according to the customer need. Moreover, there is a possibility to customize brand data, such as a product name, logo, copyright and contacts.

- **Problem diagnostics**
  KPA EtherCAT Studio includes system problem diagnostics, which provides clear data interpretation for further successful problem solving.

Studio Development Framework architecture and integration



Feature packages

Features	Basic	Standard	Premium
Studio			
Scaling Signal Values	●	●	●
Automation interface	—	●	●
Slaves Library	●	●	●
Studio/Emergency Output	●	●	●
Watch Viewer	●	●	●
Master Output	—	●	●
Plug-ins for configuring specific devices			
CANopen Master/Slave (EL6751)	●	●	●
Profibus slave (EI6731)	●	●	●
Bridge terminals (EL6692/EL6695)	●	●	●
Modular Devices	—	●	●
Virtual Serial COM	—	—	●
MDP Profibus Master Gateway Profile 3100	○	○	○
Tools			
Topology Viewer	●	●	●
Snapshot Viewer	●	●	●
Chart Viewer	●	●	●
Diagnostic scanner	●	●	●
S2S Communication Editor	●	●	●
EEPROM Editor	—	●	●
Comparing tools	—	—	●
Data logging tools	—	—	●
Common			
DC	●	●	●
Tasks/Sync Units	●	●	●
Power calculation via LVDS	—	—	●

Features	Basic	Standard	Premium
Master			
Cyclic Commands	●	●	●
ENI Export	●	●	●
External task	●	●	●
PI Alignment	—	●	●
Master Watchdog	—	●	●
Master Mailbox. AoE	—	●	●
Master Mailbox. EoE	—	●	●
ENI Export. XSLT Scheme support	—	●	●
Cable Redundancy	—	—	●
Slave			
Slave Mailbox. CoE	●	●	●
Slave Mailbox. FoE	●	●	●
Slave Watchdog	—	●	●
Slave Mailbox. AoE	—	●	●
Slave Mailbox. EoE	—	●	●
Slave Mailbox. SoE	—	●	●
Configuring Init Commands	—	●	●
FMMU/SM	—	●	●
Direct Memory access	—	●	●
Direct EEPROM access	—	●	●
Explicit identification	—	●	●
Hot Connect	—	—	●

● Included in the delivery set
— Not included in the delivery set
○ May be included in the delivery set

KPA Master Redundancy (patented technology)

Network protection from control system failure

Inbuilt EtherCAT functionality of cable redundancy cannot protect the control system, where control application with EtherCAT master is launched, from restart, disconnection or failure.

KPA Master Redundancy is koenig-pa GmbH patented technology, which resolves mentioned problems and allows to stay operational even in synchronized environment.

Benefits and key features

- **Unique technology for network protection from control system failure**
  koenig-pa GmbH patented technology – Master Redundancy – provides unique fault tolerance to resist possible control system failures.

- **Support of any network topology**
  Master Redundancy supports a network of any topology, such as a ring, a star, and a daisy chain.

- **Unlimited number of control system units**
  Master Redundancy can be used for unlimited number of control system units. It is possible to enable multiple redundant masters without collision when two or more passive masters attempt to start the failover protocol.

- **Cost-effective solution**
  For stable system operation, there is no need to use expensive equipment such as a real-time Ethernet switch.

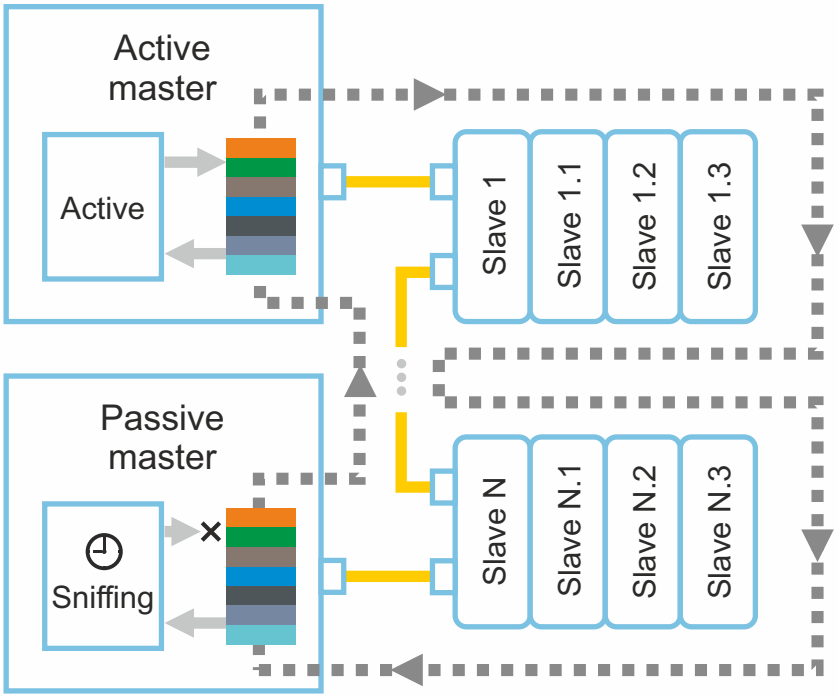
- **Prompt response to system failures**
  Redundant master can take the control immediately without any dedicated control device, additional signal lines or manual control.

- **Adaptation to any fieldbus system**
  Any fieldbus system using hop-to-hop serial master-to-slave communication principle.

Workflow

EtherCAT configuration with enabled Master Redundancy consists of an active master device and one or several passive masters.

Master is an agent, which cyclically creates a data telegram, fills it with requests, and sends it to the bus in strict time intervals. A data telegram is common to all slave devices connected to the bus, and it passes from one device to another.



This feature is extremely useful for fault tolerance: any device connected to the bus is fully aware of slave's activity and can transparently acquire, or sniff, the data, which is transferred between master and slaves. There is no need to modify any slave devices, to add any additional signals, or to change the transfer protocol.

During a normal operation, redundant master is passive, sniffs data, and doesn't enter its own telegrams. As all passive masters are consistent with the bus activity, they are ready to take place of active master anytime, when it fails.

When passive master is not getting a telegram he expects, he knows that the bus has no master anymore. There is no need to wait until the current cycle is over – redundant master can take control immediately, posting his own telegram. And this telegram will be correct and meaningful, because passive master was tracking the same changes with failed active master.

KPA Motion Control

Software for Motion Control

KPA Motion Control is a library used in software motion to turn any device to motion controller using position, velocity or torque control. KPA Motion Control is specially designed for automation industry, medicine, and other fields, where it is necessary to control the moving parts of equipment, for example, for numerical control (CNC) machines. KPA Motion Control is implemented according to PLCopen specifications.

Benefits and key features

- **3D-axis, synchronized axis and single-axis motion control**
  KPA Motion Control provides the opportunity to create custom applications for managing portal systems and 3D-axis motion with complex trajectories.

- **Time-optimal trajectory generation on the fly**
  Internal algorithms of KPA Motion Control allow to generate time-optimal trajectories at each motion cycle.

- **Jerk-limited**
  KPA Motion Control helps to reduce equipment wear, acoustic noise, and loads amplitude in motion.

- **Operating System Abstraction Layer**
  KPA Motion Control is compatible with various systems due to developed Operating System Abstraction Layer (OSAL).

- **Bus Abstraction Layer**
  Bus Abstraction Layer (BUSAL) allows to interact with drivers based on various profiles, such as CiA402/DS402, SERCOS and PROFIdrive.

- **Available for various CPUs**
  KPA Motion Control offers multi-thread processing for multi-core CPUs and is also optimized for low-end CPUs.

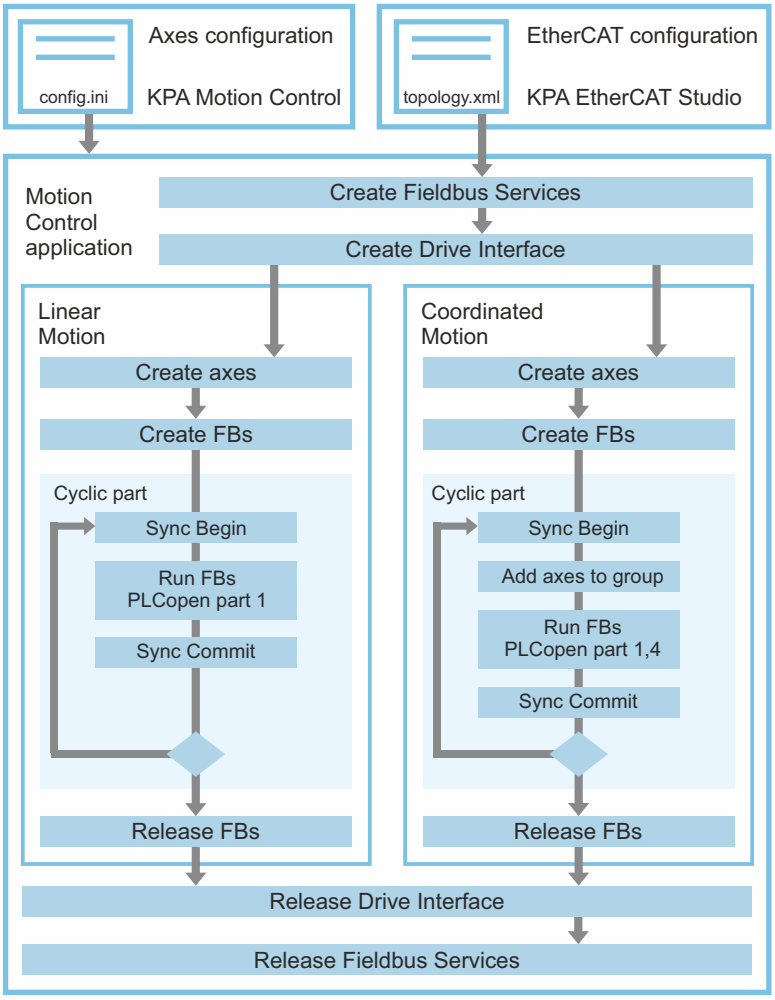
- **Native EtherCAT bus support**
  EtherCAT bus support is provided by a comprehensive own-developed master driver.

- **Meets industry standards**
  koenig-pa GmbH is a voting member of PLCopen Group. KPA Motion Control supports PLCopen specifications with additional extensions.

Workflow

KPA Motion Control is delivered as an archive, which includes documentation, header files, libraries and examples. Remote usage of product capabilities is provided by proxy development kit. KPA Motion Control allows to control drives using a non-real-time OS on the client side due to motion control performed in a real-time OS on the server side.

KPA Motion Control is complemented with Motion Configuration Utility – a plug-in of KPA EtherCAT Studio, which allows to create configuration, check it and generate configuration files for custom applications.



KPA Motion Proxy

KPA Motion Proxy is an add-on to KPA Motion Control that allows to transfer control logic of the real-time application to the non-real-time system. It means, that this add-on provides remote control of real-time motion application. The addition consists of two parts: client (works on non-real-time system) and server (works on real-time system). KPA Motion Proxy is a bridge for GUI interfaces which allows to increase application interactivity and to improve visualization of the application.

KPA Automation View

Advanced HMI runtime

KPA Automation View is a powerful solution for human-machine interfaces (HMI) with design tools for programming each interface control.

Benefits and key features

- **Unlimited possibilities for creation complex interfaces**
  In KPA Automation View, there are no limits on the number of created screens and data tags. Moreover, static and animated graphics are available, so that objects can change appearance according to PLC tags values.

- **User access control and logging**
  KPA Automation View provides a wide range of user access settings. All user actions are logged.

- **Connection to various types of PLC**
  Data is transferred between PLC and KPA Automation View through OPC UA, OPC DA Classic or custom TCP-based protocols. Other protocols are supported using KPA Automation Server.

- **Additional features of data storage, export and report generation**
  KPA Automation View offers data storage, report generation of the current system state, data export in CSV and HTML file formats, and work with databases (read from or write into MS SQL and MySQL).

- **Suitable for CFR 21 Part 11 compliant systems**
  Title 21 Part 11 of the Code of Federal Regulations (CFR) establishes the United States Food and Drug Administration (FDA) regulations on electronic records and electronic signatures. CFR 21 Part 11 applies to medical device manufacturers, biotech companies, biologics developers, and other FDA-regulated industries.

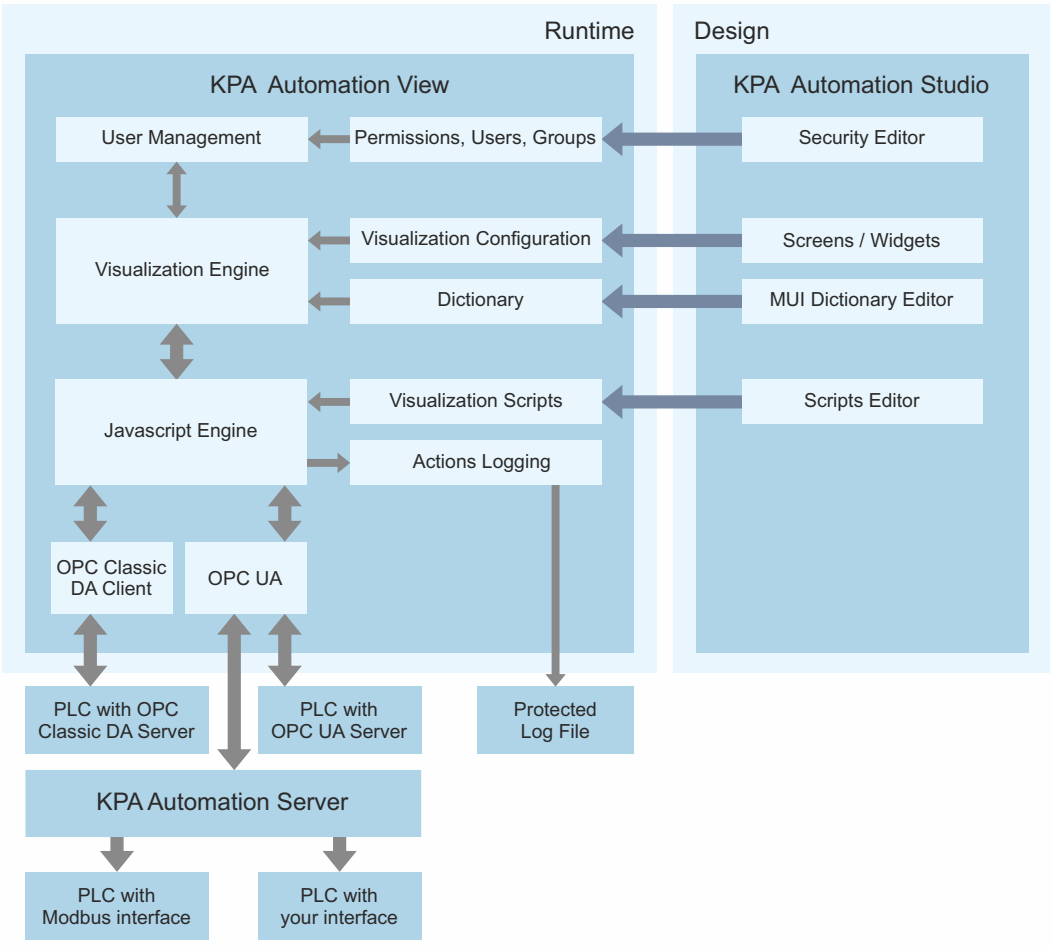
- **Multi-HMI support**
  KPA Automation View can run on several Windows-based Pcs. KPA Automation View is available for Windows 7 Professional and Windows 10 IoT operating systems. On demand, koenig-pa GmbH offers images of these operating systems, which ensure consistent work of KPA Automation View.

Workflow

The delivered package of KPA Automation View includes **KPA Automation Studio** – integrated development environment with user-friendly, drag-and-drop user interface for programming appearance and behavior of HMI controls.

KPA Automation Studio provides the following features:

- Extendable library of controls, styles, and scripts
- Vector graphic editor
- Import and export of objects and resources
- Script debugging



KPA Automation softPLC (based on straton® PLC core)

KPA Automation softPLC Embedded Tools
Software components for embedded platform

Focused on IEC 61131-3, KPA Automation softPLC technology is designed for all automation solutions, from machinery, controllers and drives manufacturers, to system integrators and machine builders. This technology is based on straton® PLC core and fulfils the 4 key requirements we apply to our products: Small, Smart, Simple and Speedy.

- **Simplify the configuration**
  KPA Automation softPLC Integrated Development Environment (IDE) includes a hardware device and fieldbus configuration tool for various kinds of networked I/Os or protocols, and enables to describe networks as configuration trees and to wire variables to the I/O channels of hardware devices.

- **Secure applications - Redundant System**
  All key application information is stored in one unique block of memory and all the redundancy mechanisms are available to make a hot restart of the application. A standard redundant implementation through Ethernet is delivered with PLC engine of KPA Automation softPLC, using a proprietary protocol over the link that needs no specific programming or configuration.

- **Reduce engineering time**
  KPA Automation softPLC project automation tool allows you to automate the import/export of information from your databases or other tools directly into the application (variable definitions and I/O configurations but also application programs generated automatically or copied from existing templates).

- **IEC 61131-3 standard programming**
  KPA Automation softPLC development environment is a set of powerful text and graphic editors for IEC 61131-3 languages: Sequential Function Chart (SFC), Function Block Diagram (FBD), Ladder Diagram (LD), Structured Text (ST) and Instruction List (IL).

- **Commissioning - Debugging**
  KPA Automation softPLC provides built-in simulation within the development environment in various modes of operation such as cycle by cycle, step by step, breakpoint and console mode.

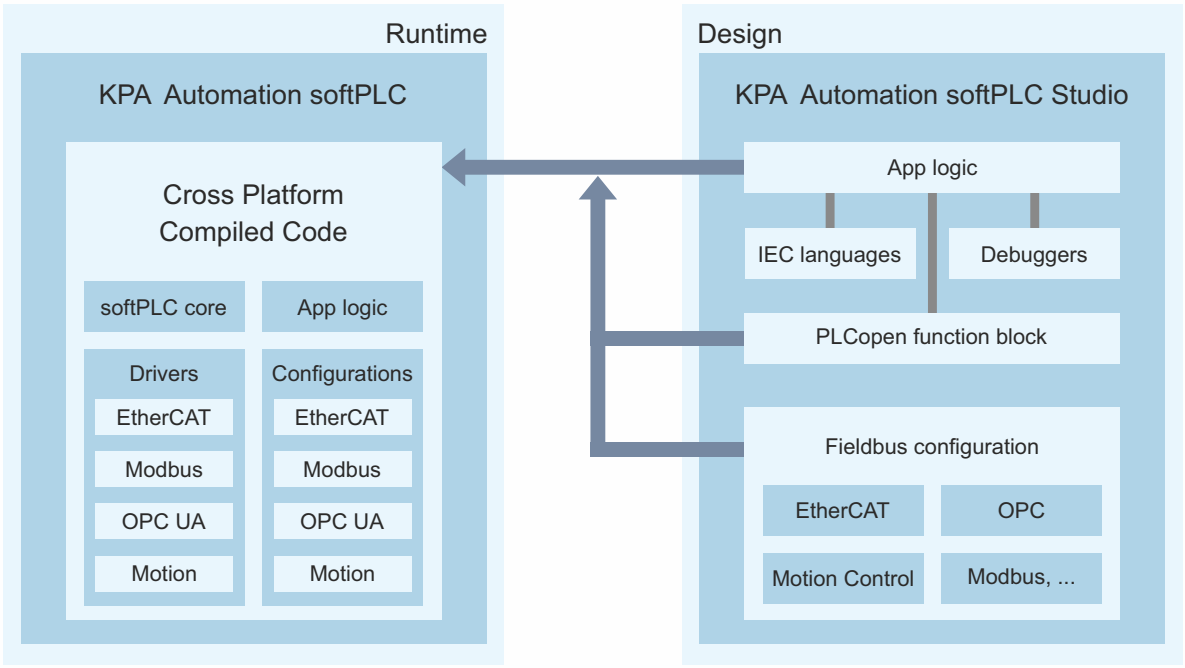
- **Softscope**
  An integrated scope using a real-time high-speed protocol can be configured to monitor key variables within the application to provide detailed debug information with high precision.

- **Distributed Application**
  PLC engine of KPA Automation softPLC permits real-time exchanging of data among different runtime systems through Ethernet. The event based protocol technology is used and it ensures high performance and very low network traffic at runtime.

- **Communication**

  KPA Automation softPLC supports a wide range of industry standard protocols for various sectors and application areas including automotive, building automation and energy: OPC UA (Server and Client), Modbus (Master and Slave, both TCP and serial), EtherCAT (Master and Slave), PROFINET Controller.

- **Solutions**
  - Energy
  - Motion Control and Drives
  - Science and Education
  - IEC 61131-3 embedded
  - Gateway
  - Fieldbuses
  - IoT connectivity



Custom Development

koenig-pa GmbH offers specific software development for customers who require additional support for integrating our products into their applications or solutions.

KPA Automation Server

Data acquisition hub

KPA Automation Server collects data from various controllers, aggregates it and transfers through the secure OPC UA protocol. KPA Automation View may use KPA Automation Server for connection to any PLC through protocols other than OPC UA or OPC DA.

Benefits and key features

- **Unified controller gateway**
  KPA Automation Server integrates even old field devices and controllers into modern IT infrastructure.

- **Data provider for various types of applications**
  KPA Automation Server provides aggregated data for the following software:
  - Software for creating Human Machine Interfaces (HMI), for example, KPA Automation View
  - Data analytics applications, for example, KPA Automation Data Analytics
  - Manufacturing Execution Systems (MES)

- **Secure data transfer**
  Data is transferred through the secure OPC UA protocol.

- **Flexible development solution**
  KPA Automation Server can be integrated or used as a standalone application.

- **Increasing capabilities by custom plug-in creation**
  Plug-ins can be created using a software development kit (SDK) to enhance communicating with specific devices.

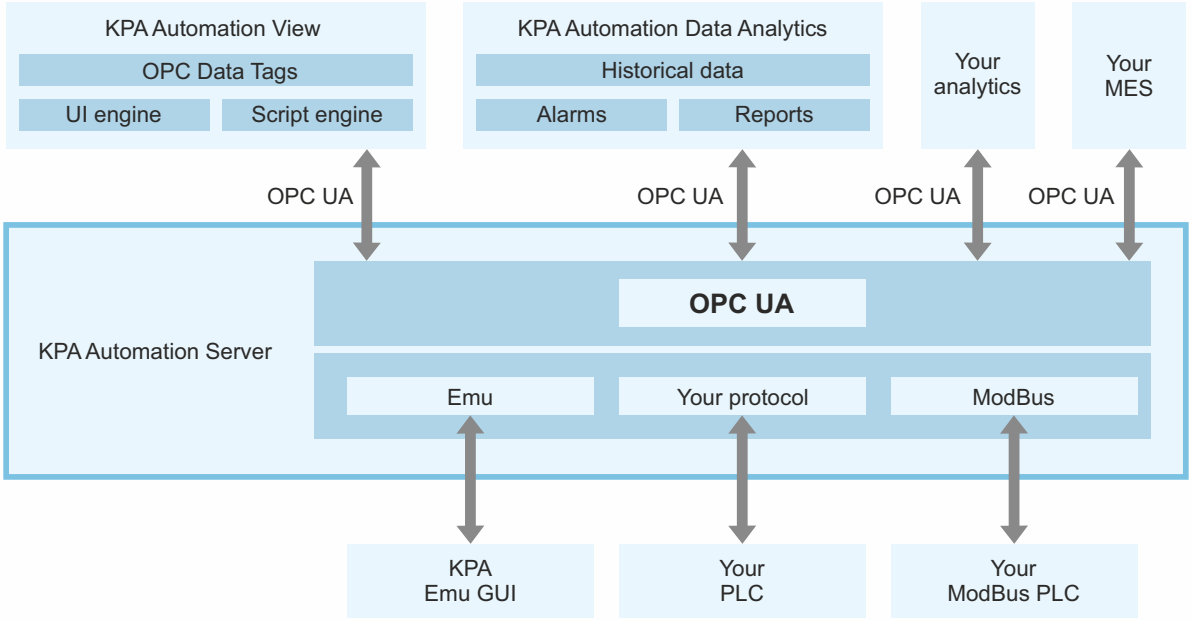
- **Ready for Industry 4.0**
  Industry 4.0 refers the concept of fully automated digital production and data exchange in manufacturing technologies and processes. Technology of secure data transfer between any types of devices, provided by KPA Automation Server, entirely complies with the Industry 4.0 concept.

Workflow

A development process runs separately from HMI and PLC in KPA Automation Server.

The workflow is divided into a design mode and a runtime mode. The design mode is for creating and editing a configuration file. In the runtime mode the configuration file is used for building OPC UA tag tree and for connecting data sources (devices or applications), which use other access protocols, to OPC UA tag tree nodes.

Data tag tree can be either manually created in KPA Automation Server Configurator without participation of PLC or can be imported from the PLC into KPA Automation Server. Imported data tag tree is protected from any changes in the PLC.



For HMI debugging and troubleshooting, KPA Automation Server provides the Simulation plug-in, which generates data by source emulation to check tags values.

KPA Automation Data Analytics

Innovative reporting solution

KPA Automation Data Analytics is an innovative reporting solution, suitable for large and small companies, which need to collect a bunch of tag values in a table report.

Benefits and key features

- **Report customization**
  KPA Automation Data Analytics allows to specify data displayed in a table report and to add a company logo.

- **Unlimited number of reports**
  No limits on the number of created reports. A period for data selection can be set for each report.

- **Various report formats**
  Generated reports can be exported in HTML, PDF, Excel, and CSV file formats.

- **Scheduled report generation**
  In KPA Automation Data Analytics, it is possible to set specific time for automatic report generation.

- **User access control and logging**
  KPA Automation Analytics provides a wide range of user access settings. All user actions are logged.

- **Connection to various vendors PLC**
  Data is transferred between PLC and KPA Automation Data Analytics through the OPC UA protocol. Other protocols are supported using KPA Automation Server.

- **Suitable for CFR 21 Part 11 compliant systems**
  Title 21 Part 11 of the Code of Federal Regulations (CFR) establishes the United States Food and Drug Administration (FDA) regulations on electronic records and electronic signatures. CFR 21 Part 11 applies to medical device manufacturers, biotech companies, biologics developers, and other FDA-regulated industries.

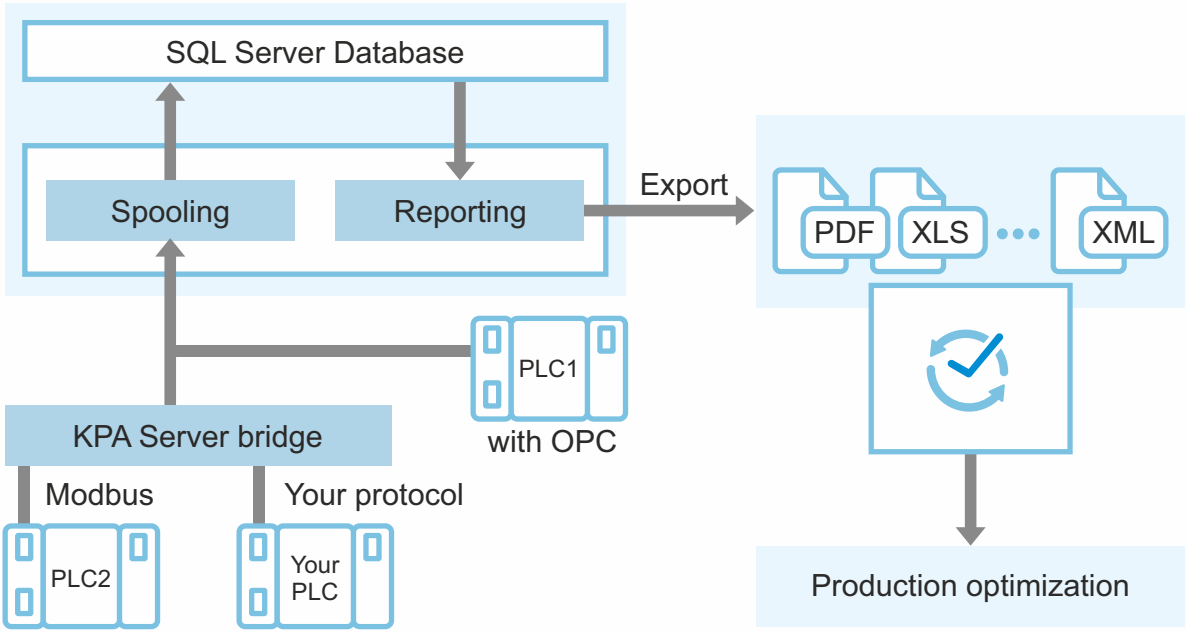
Workflow

KPA Automation Data Analytics is provided as a standalone application.

Reports are generated using selected tags and special report templates, which can be customized.

Moreover, a delivered package includes the following software:

- KPA Automation View
- Spooling and report services running in background
- KPA Automation Server (optional) for transferring data through protocols other than OPC UA



KPA Automation View in the package is used to select tags to be collected, to configure reports and to view ready reports. There is no need to keep KPA Automation View running for data collection. All data is gathered by spooling service.

KPA Automation Control System

Hardware solutions

KPA Automation Control System is a compact system, equipped with energy-efficient CPUs and advanced SCADA software. This system is used for complex control tasks and is specially designed to save extra space and reduce the cost of maintenance.

Benefits and key features

- **High performance**

  KPA Automation Control System is equipped with Intel Core i5 CPUs for sophisticated control tasks.

- **Compact, cost-saving system**

  KPA Automation Control System is a compact single-block device thoroughly designed for saving space and reducing the cost of maintenance.

- **Windows 10 LTSB IoT pre-installed**

  KPA Automation Control System is a complex solution with pre-installed software and the operating system. koenig-pa GmbH ensures full compatibility with Windows 10 LTSB IoT.

- **Native EtherCAT bus support**

  EtherCAT bus support is provided by a comprehensive own-developed master driver.

- **Connection to various PLC**

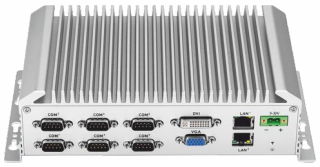
  Data is transferred between PLC and KPA Automation Control System through OPC, Modbus TCP/IP, or custom TCP/IP protocols.

- **Advanced software package: HMI and PLC**

  A delivered package may include the following software:

  - KPA Automation View – a powerful HMI solution with designer tools for programming appearance and behavior of each interface control. It provides access to unlimited tags through OPC UA, OPC DA Classic or custom TCP-based protocols.
  - KPA Automation softPLC – is a programming environment for developing PLC for real-time operation systems such as Linux, Xenomai, INtime, Windows. Focused on IEC 61131-3, KPA Automation softPLC technology is designed for all automation solutions, from machinery, controllers and drives manufacturers, to system integrators and machine builders.

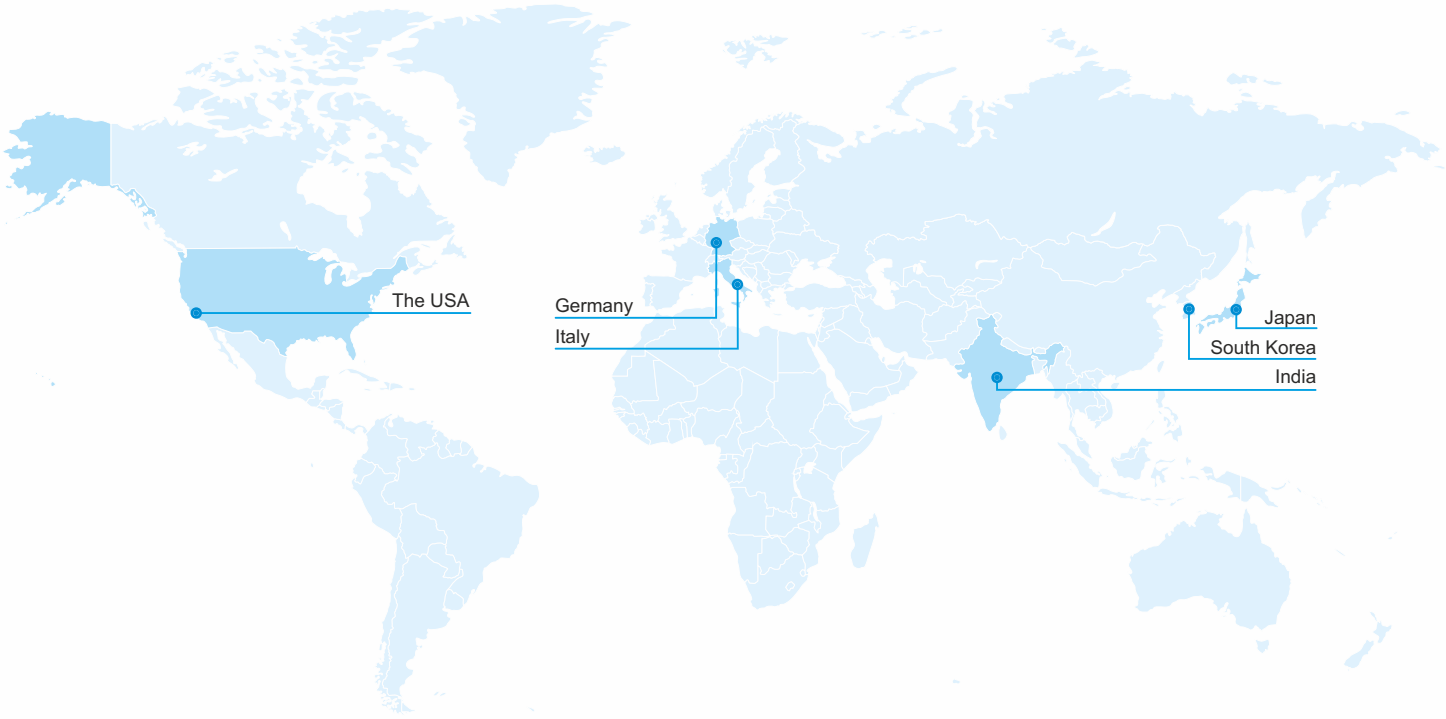
Hardware specifications



Model	KPA Automation Control System Panel	KPA Automation Control System Box
CPU	i3 / i5 / i7 / Celeron / Atom	i3 / i5 / i7 / Celeron / Atom
RAM	4 / 8 / 16 GB	4 / 8 / 16 GB
Display controller	Embedded, Intel® integrated	Embedded, Intel® integrated
Storage	64 Gb SSD or higher	64 Gb SSD or higher
Networking	Multiple Intel® I210/I211 Ethernet Controller	Multiple Intel® I210/I211 Ethernet Controller
Interfaces	Various VGA, DVI, HDMI, USB 2.0/3.0, RS-232/485 (depending on part number)	Various VGA, DVI, HDMI, USB 2.0/3.0, RS-232/485 (depending on part number)
Display	Integrated 12/15/15.6/17/19/21”, max. resolutions 4K, 4:3/16:9, resistive or capacitive touch panel	Integrated 12/15/15.6/17/19/21”, max. resolutions 4K, 4:3/16:9, resistive or capacitive touch panel
Power source	9...30V DC	9...30V DC
Case protection	IP20...IP65	IP20...IP65
Cooling	Active or fanless	Active or fanless
Regulatory	FCC, CE, RoHS standard	FCC, CE, RoHS standard
Working conditions	Temperature: -20...60 °C, Relative humidity 0...90%, non-condensing	Temperature: -20...60 °C, Relative humidity 0...90%, non-condensing

koenig-pa GmbH
Im Talesgrund 9a
91207 Lauf a.d. Pegnitz
Germany
www.koenig-pa.de

Contact
email: sales@koenig-pa.de
tel.: +49 9128 725 631
tel.: +49 9123 960 5796



International Resellers

India
KPA India Solutions
tel.: +91 9923123255
nilesh.dagade@kpaindia.co.in
www.kpaindia.co.in

India
SAS Automation
tel.: 9850418036
support@sasnextgen.co.in
www.sasnextgen.co.in

Italy
Telestar
tel.: +39 0321 966 768
telestar@telestar-automation.it
www.telestar-automation.it

Japan
MICRONETcorp.
tel.: +81 299 90 1733
salesadmin@mnc.co.jp
www.mnc.co.jp

South Korea
JNS Global
tel.: +82 02 6083 4556
jnssales@jnsglobal.co.kr
www.jnsglobal.co.kr

United States
RADIC Technologies
tel.: +1 408 263 6500
sales@radictech.com
www.radictech.net