KEB

CNC SOLUTIONS

IDEALLY MATCHED HARDWARE AND **SOFTWARE COMPONENTS**
EN

CNC SOLUTIONS

CNC KERNELH
High-end CNC solution

COMBIVIS studio 6
Automation tool for
CNC, PLC, safety and drives

COMBIVIS studio HMI
CNC visualization

COMBIVIS CLOUD
Ready for IoT

COMBIVIS CONNECT
Remote maintenance

SEAMLESS INTEGRATION

In order to create a complete CNC solution, a consistent concept of coordinated hardware and software components is required. This starts with IPC-based control technology and fitting visualization, extends to drive controllers with integrated safety up to motors and gears. System solutions from a single source simplify implementation.

SCALABLE SOLUTIONS

High-end solution
For demanding requirements, the high-end solution for CNC automation can be selected. This solution integrates ISG's CNC kernel with various features for CNC, robotics and motion control. It is characterized by excellent path and speed planning as well as the underlying architectural model of the software. This allows the user to make individual adjustments and add extensions.
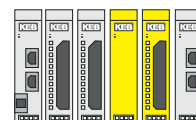
KEB

**EMBEDDED CONTROLS
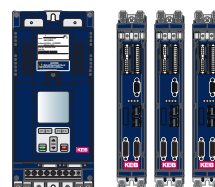IPC CONTROLS**

Scalable real time control
solutions
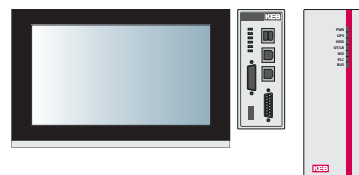
**REMOTE I/O
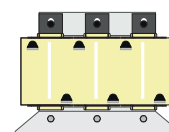SAFETY PLC**

EtherCAT® based I/O system,
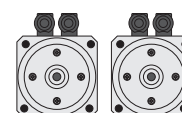Safety over EtherCAT®

DRIVE UNITS

Modular drive systems

FILTER

Flexible mains and
motor filters

MOTORS

Extensive range of
motors

HIGHLIGHTS

- Ideally matched hardware and software solutions
- CNC kernels with extensive function packages
- Extension of machine functions via IEC 61131
- User-friendly HMI

- Scalable controls, drives and motor solutions
- Open tools for automation with COMBIVIS studio 6
- Safety
- Remote maintenance integrated

HIGH-END SOLUTION
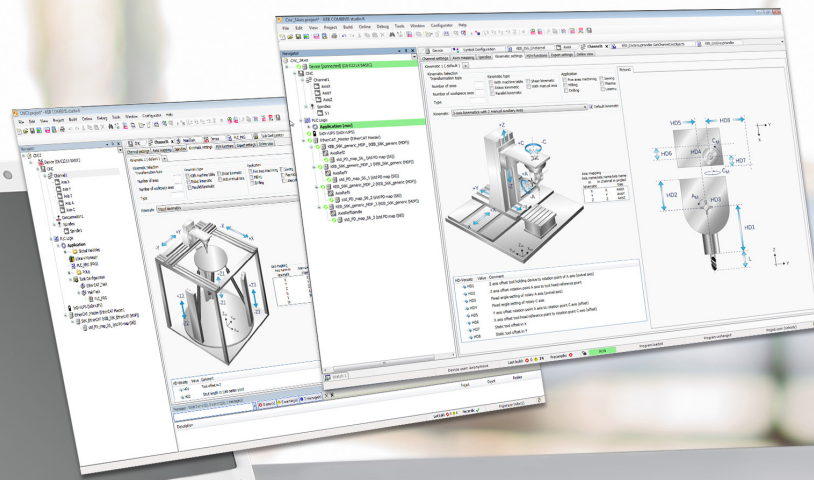
COMBIVIS studio 6
Automation tool with object-oriented design

High-end solution
KEB extention package

FAST AND PRECISE PATH PLANNING

For complex requirements, the high-end solution with the integrated ISG CNC kernel offers extensive features for CNC, robotics and motion control. Systems with up to 64 axes are possible for the realization of a CNC application. Depending on the requirements, the number of axes or channels can be increased. Extensive function packages are available for this purpose. The user has the possibility to access on a database with various transformations.

The interpolation can be linear, helical or spline interpolation. The aim is to achieve a stimulation-free and jerk limited motion control. In addition, KEB's CNC solution supports the possibility of volumetric compensation according to ISO 230. The system achieves its high precision by various compensation possibilities of mechanical and thermal influences.

OPEN TOOLS

KEB enables CNC machine manufacturers to automate their machine technologies with open automation tools based on standards (IEC 61131) without limiting the CNC functionality. This allows machine manufacturers to create their individual solution on demand. The system is set up using the COMBIVIS studio 6 automation tool – flexible and user-friendly. The object-oriented design of the tool supports the user in configuring the axes and channels.

CNC SOLUTION WITH ISG KERNEL

For the implementation of high-end applications, the ISG CNC kernel was implemented on real-time IPC controllers. The flexible and scalable system solution, consisting of control, visualization, safety technology, drives and motors, enables various applications in the field of CNC.

The functional scope offers solutions for machine tools as well as the movement of complex kinematics. The functions are used, for example, in applications such as milling, drilling, cutting, grinding, bending and associated handling systems.

BASIC PACKAGE

The basic package of the high-end solution offers essential CNC features. These are among others:

- Speed and acceleration pre-control, jerk limitation
- Powerful, clock-synchronous CNC-PLC interface
- Coupling functions, gantry axis functions, measuring functions
- Look-ahead function
- Linear, circular, spiral interpolation
- DIN 66025 program syntax with high-level language extension
- Subprogram technology, macro definitions, coordinate systems, spindle and additional functions
- Operation with automatic mode, manual mode, single block mode, referencing, block advance, handwheel operation mode
- Tool management

Compensation value

Master 2

Master 1
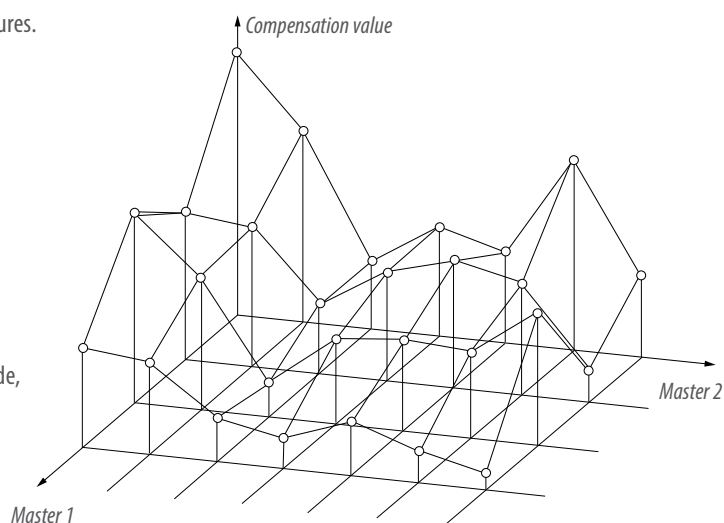
EXTENSIVE FUNCTION PACKAGES

Building on this, extensive function packages are available for the implementation of various applications. The packages can be selected according to the requirements and the software can be extended by the necessary functions:

- **CNC Channels:** Up to 12 channels expandable, channel synchronization, axis exchange between the channels
- **Transformation:** Expansion of all CNC channels through kinematic transformation
- **High-Speed Cutting (HSC):** Faster processing time, higher accuracy, better surface quality
- **Spline:** Use of gearing (AKIMA, B-Spline) for geometry optimization
- **Cutting:** CNC technology extension for cutting (e.g. laser, plasma, oxyfuel, water jet)
- **Volumetric compensation:** Effective way to increase machine accuracy

HIGHLIGHTS

- Integrated ISG CNC kernel
- Simple and flexible set up with object-oriented design in COMBIVIS studio 6
- Extension of machine functions via IEC 61131 without limiting CNC functionality
- Extensive function packages

- Safety
- Advanced features for CNC and robotics
  - Compensation axis / temperature
  - High speed cutting
  - Look-ahead function
- Multi-Core management

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Automation **with Drive**

keb-automation.com