E•ENC55: THE EMBEDDED CNC

The E•ENC55 is the first high-performance CNC in top hat rail format. Thanks to highly modern communication interfaces such as Ethernet TCP/IP for networking and PC-MMI for interfacing as well as two CANopen interfaces for connecting field bus terminals and digital drive amplifiers, it is predestined for use in machines with distributed control structures.
One further important aspect about use of the „top hat rail CNC“ is that it is independent of PC format factors. Regardless of what the bus systems of the future will be called and how much space will still be available in the PC, as an MMI the E•ENC55 only needs a PC with an Internet connection, no more. A further input voltage range of the power supply unit from 18 to 30 VDC and the possibility of direct no-problem plug-in connection for E•FBM field bus terminals without additional wiring effort help to save costs and ensure use in particularly tough industrial environments.

Further features

- Top hat rail CNC with 32-bit MPG555 controller
- Powerful NC operating system with programming to DIN 66025, extended command repertoire and additional formula interpreter
- Up to 12 axes, of which 6 interpolate simultaneously
- Integrated PLC, programmable in all languages to IEC 61131-3
- Machine constants file for adaptation to the machine and the technology
- CNC graphical user interface that can be designed freely for Windows 2000, Windows XP, XP embedded
- Software packages for axis optimization, CNC data conversion and remote diagnostics
- The first CANopen interface for connection of digital and analog field bus terminals, valve islands and frequency converters etc.
- Second CANopen interface as fast digital drive bus (DSO-402)
- Direct connection of all E•FBM field bus terminals

E•FBM field bus terminals with digital and analog I/Os

Typical NC functions

- Look-ahead to optimize processing speeds
- Block preparation for processing extremely short NC blocks
- Feed-forward to compensate the following error
- Reverse travel and restart on the contour
- Spatial rounding for fast jolt-free motions
- Variable acceleration profiles for changing load conditions
- Block search for entering anywhere in prolonged machining operations
- Recording of axis positions followed by data reduction and generation of polynomials
- Tangentially slaved C axis for tool alignment during contour machining
- Synchronous/gantry axes to save on mechanical drive components
- Handwheel function for superimposed motions
- Technologically specific functions, e.g. for out of round machining
- Tool management for selection of any tools with compensation and geometry data
- Formula interpreter for the generation of mathematically sophisticated part programs
- Analog output dependent on the contouring speed to improve performance and dosing etc.
- Spindle lead/backlash compensation to balance out mechanical errors
- PLC positioning axes in parallel with contour machining
- 3D online spline for processing teach-in contour points in space
- Coordinate transformation for easy programming
- Modally active comparison operations for flexible program execution
- Tool slaving in space (5-axis) taking the machine geometry into account
- 3D axis compensation to compensate for mechanical tolerances
- Geometry filter to reduce the density of points