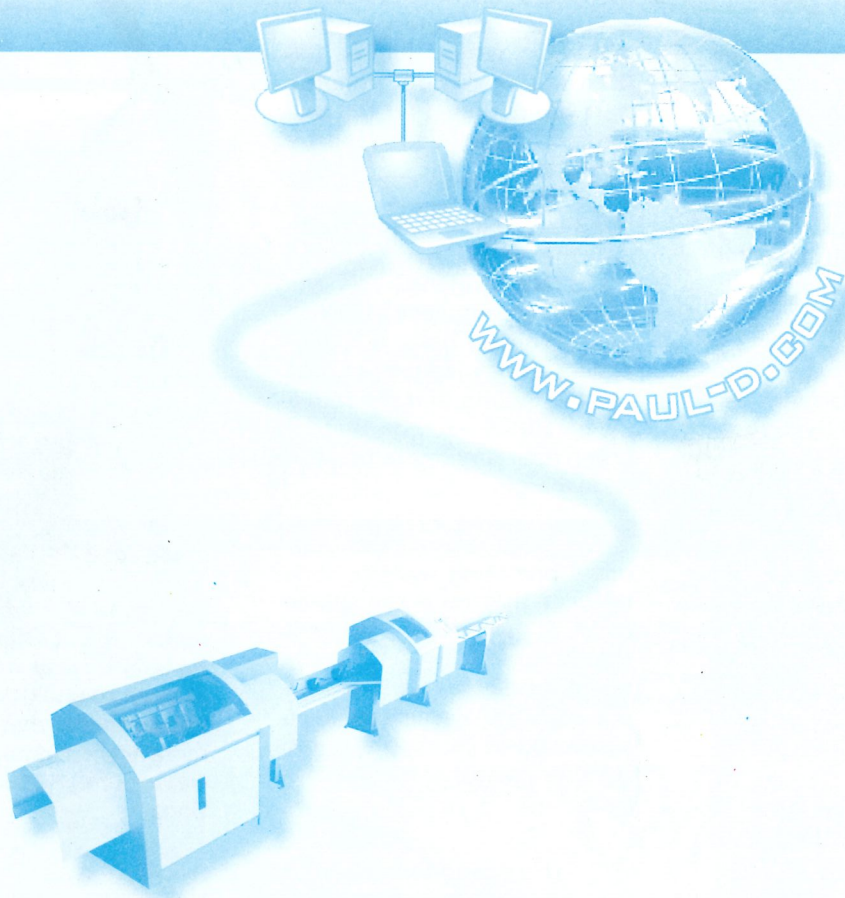


COMMUNICATION STARTED



CREATED WITH **LINUX & JAVA**

CNC Control
MAXI 5



Functional Features

LINUX Operating System

Why LINUX?

As a rule the high-performance machines and software, which we develop, place the highest demands on control systems with respect to:

- Real time capability, i.e. the required reaction times to events on the machines lie in the milliseconds range.
- Computer speed on mathematical tasks, such as e.g. optimization or path-time calculations for several positioning devices (NC axes).
- Simultaneity of many different processes on machines and mathematics in the computer.

These tasks can only be fulfilled with standard PLC units at a very high hardware cost. Our machines therefore preferably operate under the control of an industrial PC. For this purpose the PC requires an operating system which is suitable for industrial use.

The LINUX operating system is an emulation of UNIX and its

functionality. UNIX was developed 30 years ago, long before today's PCs became commonplace and was a system for the super-computers of the day with several nodes. From its origins LINUX is therefore a so-called multi-tasking and multi-user system (unlike MS DOS) and hence right from the start was designed for the performance demanded in today's networks.

Hundreds of scientists throughout the world have worked - and are working - on the further development of LINUX on a voluntary basis. It is generally acknowledged in the specialist world that the stability of LINUX exceeds that of other operating systems by a wide margin.

LINUX is a transparent and open operating system. It is open in that even the source code is available. Through the integration of an equally openly-available real time core our software developers have succeeded in creating a stable basis for complex machine controls.



Fig. 1: The penguin is the symbol of the LINUX community

For the very reasons described above LINUX is a very widespread operating system in the Internet where it is frequently used as a web server.

In summary:

Our controls, which operate under the LINUX operating system, display a higher level of performance, they are more independent, more open and more transparent than others - even under real time conditions.

Operation via Touch Screen

The unique advantage of the touch screen is that it also serves as an input medium eliminating the need for a mouse or keypad:

The screen features variable operating surfaces, which the operator can actuate by touching. This gives almost unlimited possibilities in terms of graphic display and operator guidance

and allows creation of simple and logically structured user interfaces suited to a workshop environment.

For the machine operation the touch screen technique offers essential benefits:

- No need for operating elements that are designed for an office environment rather than for industrial use.
- Space-saving and easy to incorporate in the machine

The MAXI 5 CNC Control

The operation of the machine controls is workshop-oriented and extremely simple. All data and instructions are easily entered on a touch screen and displayed immediately. Additional (dust)-sensitive devices such as the mouse or keyboard are unnecessary.



Fig. 2: The touch screen with MAXI 5 Basic control

MAXI 5 - The new generation of controls

These new CNC controls are based on high-performance industrial PCs and operate under the up-to-date LINUX operating system.

In this way the network capability is already built in. The graphical user interfaces are derived from the programming language Java. That is the latest software standard for object-oriented programs.

Together with an up-to-date browser (e.g. Internet Explorer, Netscape Navigator etc.) and integrated Java, communication with the control is possible because it

constitutes an independent Web server.

Via the Internet it is possible to communicate with the MAXI 5 control from any place round the globe. For workshop-oriented control requirements we prefer touch screens. We develop and build this new generation of CNC controls according to tradition in our own factory. In this way we avoid interfacing problems and achieve optimum functionality.



MAXI 5 Basic

This new "small" control already features a high-performance industrial PC based on the Linux operating system. Especially for the control of simple cross-cut systems, it offers the following possibilities:

- Very easy entry and display of cutting lists and other data on a small monochrome touch screen.
- Complete control of machine and accessories incorporated in the cross-cut station
- Partial optimization as standard
- Machine and control diagnosis

- Recognition of crayon-marked defects (option)
- Limited full optimization (option)
- Control of sorting systems (option)
- Data exchange and cutting list management with customer's network system (option)

This control offers a convenient and simple starting solution for automatic cross-cutting and network capability.



Fig. 3: The clearly arranged touch screen is already included in the MAXI 5 Basic version.

The MAXI 5 CNC Control

MAXI 5 Premium

The Premium version is the flagship of the MAXI 5 generation of CNC controls and also operates under LINUX.

The user interface of the terminal (however, without starting functions) is identical on any computer within the company network.

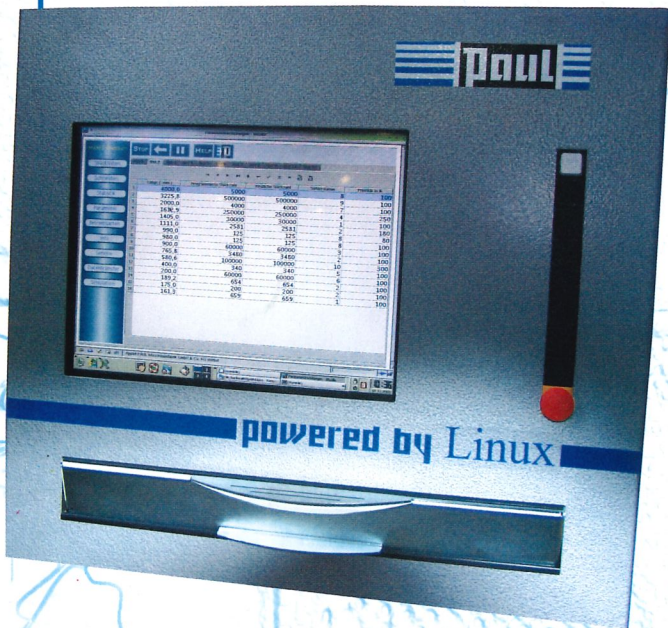


Fig. 4: MAXI 5 Premium control with large 15" color terminal

The MAXI 5 offers exceptional possibilities of yield optimization as well as comprehensive production statistics and is designed for the control of sophisticated systems including automated handling equipment.

This control incorporates a 15" color screen provided with a glass-hard touch panel in the operator terminal. The terminal is a plain, slender stand with few conventional keys for switching on and off, starting automatic functions, emergency stop, etc. The terminal also contains a protected drawer to accommodate an additional keyboard.

The features of the Premium are customized and almost unlimited.

The following operations can be carried out simultaneously by one system:

- Entry and storage of cutting lists and machine parameters
- Measurement of infeed timber lengths, different quality sections and defects
- Measurement of workpiece width and thickness (option)
- Interaction with connected vision scanner systems (option)
- Optimization of cross cuts (partial optimization, full optimization, quality optimization, value optimization, auto-adaptive priority control...)
- Creation of yield statistics
- Millimeter-precise positioning and cutting of workpieces according to many different criteria (quality grades, finger-joint lengths) at highest production speed

- Automatic separation of waste pieces
- Control of sorting systems (option)
- Control of ink-jet printers (option)
- Control of automatic de-stackers, stackers and other handling equipment (option)
- Comprehensive self-diagnosis of sensors and actuators of the system
- Unlimited data exchange in network systems



Fig. 5: Elegant operating terminal of MAXI 5 Premium control