

## Overview

● = Stepping motor   ● = Servo motor

Controller	Movement type	Axes	Runs under
IMC 4	linear, circular, helix	4 ●	Win 98, NT 4, 2000, XP
C 142/4 Interface board I5 // I5.0C // I5.0C E/A	linear, circular	3 ●	Win 98, NT 4, 2000, XP
IT 116 G	linear	1 ●	Win 98, NT 4, 2000, XP
CSI 464 D/E	linear, circular, helix, buffered mode	4 ●	Win 98, NT 4, 2000, XP
PS-PCI (for PCI slot)	linear, circular, helix	5 ●	Win NT 4, 2000, XP
UPMV 4/12 (for ISA slot)	linear, circular, helix	4 ●	Win 98, ME
PSK 4 (for parallel printer port)	linear, circular, helix, look-ahead path	4 ●	Win NT 4, 2000, XP
RS 485 (for COM interface)	linear, circular, helix, look-ahead path	6 ●	Win NT 4, 2000, XP
CAN Dongle (for parallel printer port)	linear, circular, helix, look-ahead path	6 ● + up to 121 handling axes	Win NT 4, 2000, XP
CAN PCI (for PCI slot)	linear, circular, helix, look-ahead path	2x6 ● + up to 2x 121 handling axes	Win NT 4, 2000, XP

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Composition and layout: iselmedia

# ProNC

*The Universal Software for  
Modern isel Controllers*

Automation

Integration in  
manufacturing systems



Programming interface

- Convenient operating and programming interface
- Programming according to isel PAL or DIN 66025
- Import of postprocessor files (NCP)
- Runs under Windows 98, NT 4, 2000 and XP
- Interactive machine configuration
- Flexible due to the use of interface DLLs
- Expandable by customized DLLs

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## General Overview

**ProNC** is the integration of the control programmes **Remote**, implemented for the operating system MS-DOS by iselautomation, **ProDIN** and **ProPAL** into one software product as a new, powerful operating and programming interface under MS Windows (98, NT 4.x, 2000 and XP). All NC programs that were previously used by the operators for Remote (isel NCP format), ProDIN (DIN/ISO format) and/or ProPAL (isel PAL format) can be executed by **ProNC**.

**ProNC** consequently uses the MS Windows concept of dynamic linking (Dynamic Link Library = DLL) for the realization of the necessary module and/or device interfaces for the control of:

- controllers, motor control boards or intelligent output stages for motion axes/axes systems (motion control DLLs)
- frequency converters for machining spindles (spindle DLLs)
- hardware for binary/analogue input and output (I/O DLLs)
- tool changers (tool change DLLs)
- hardware for operating and safety functions, measuring technique and the CAN fieldbus interface

**ProNC** contains an extensive dialogue software for the configuration, parameterization, start-up and diagnostics of numerical axes/systems including the necessary periphery.

The application range of **ProNC** covers automation solutions particularly in the areas assembly, handling, loading and quality inspection, in which the user programs are predominantly created textually by using teach-in functions and/or by integrating contour data records (e.g. **isel** NCP format).

To use ProNC efficiently for the purpose of start-up/optimization of the user programs, inter alia, the following characteristics were implemented:

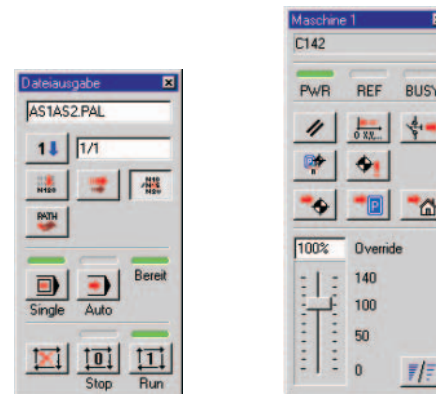
- single-step processing
- adjustment/teach-in as well as correction and test of arbitrary machine positions
- configurable system monitor for displaying the current values of real variables
- display window for speed and actual coordinates
- display of the movement control status (incl. hard- and software limit switches)
- self-sufficient spindle control panels for up to four spindles with speed override
- self-sufficient machine control panels for one or two axis systems with movement override, manual setting/deleting of workpiece zero points
- setting of breakpoints on arbitrary program lines/sets in the user program
- change of the values of real variables, e.g. for target coordinates, forward feeds, speeds and technological parameters (delay times, offset, copies, output values) while the program is executed
- teach-in and manual axis movement at the run-time of the user program
- extraction sets, set forerun, rapid traverse overlay

**ProNC** is an open software system. All interfaces are documented in the isel CNC API (Application Programming Interface). The activation of user software (as Windows EXE or Windows DLL) out of the NC program (DIN/ISO or PAL) is supported.

## Operation

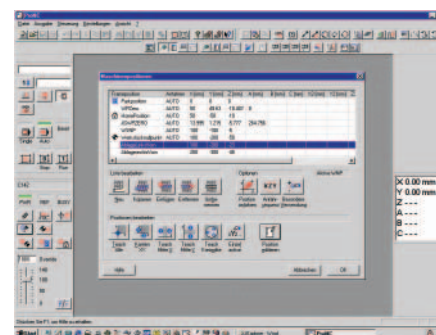
### Operating Panels with Buttons

- Starting, interrupting and cancelling the user program
- Selection of the operation mode
- Approaching selected machine positions
- Workpiece zero point on/off
- Axis override



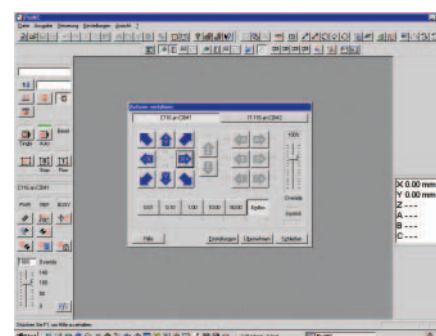
### Machine Positions

- Setting, correcting and testing machine positions
- Access to symbolic machine positions in the ISO/PAL user program



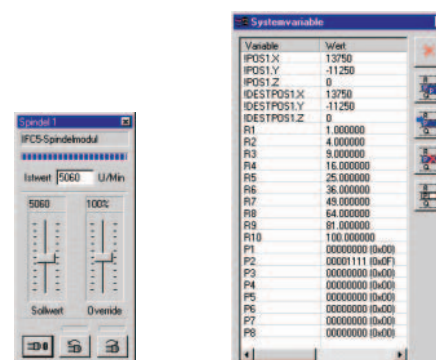
### Axes Actuation

- Manual axes actuation, alternatively in the first or second axis system
- Teach-in with function keys, mouse click or joystick
- Step-by-step mode (jog) or axis actuation, slantwise travel



### ProNC System Monitor

- Axis status (limit switch)
- Speed indication
- Actual coordinates display
- Real variables ( $R_x$ )
- Process variables ( $P_x$ )



### Spindle Operating Panels

- for up to 4 spindles

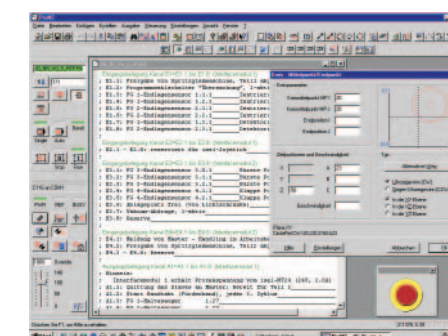
## Programming

### Range of Functions

- ProNC is the porting of the control programs Remote, ProDIN and ProPAL under Windows
- User programs in the NCP format (isy Remote), ISO format (pro DIN) or PAL format (pro PAL) are furthermore usable
- After the import with the text editor, NCP user programs are arbitrarily expandable
- Creation of the user programs alternatively in ISO syntax or PAL syntax
- Full function range analogous to ProDIN/ProPAL
- Definition and accessibility of selected machine positions by means of the geometry file
- Parameter calculation by real variables
- Boolean operations by process variables
- Arithmetic, trigonometric functions
- Alignment of axis motion and binary output units
- Possibility of calling user software (DOS Batch, WIN \*.exe, WIN \*.dll) for logging, communication and parameter exchange with external devices as proportioning, welding or laser controllers and/or intelligent sensors/actuators

### Input Support

- Editing window for the source file
- Interactive windows for inserting commands and functions in ISO syntax or PAL syntax
- Compilation run with error list and correction references
- Debug functions (break points, trace)



### File Types

- Source file: user file in ISO syntax or PAL syntax
- Geometry file: reading and writing of machine positions e.g. via teach-in, in the set-up or automatic mode
- CNC target file: compiled source file in the CNC format as output file for the interpreter
- Error file: list of the syntactic errors after the compiler run
- Variables file: reading of real variables at the program start and/or saving at the program end or abnormal termination or at run time of the user program