



## SOFT PLC

# PROCONOS® 3.3 WIN CE

ProConOS® Win CE is the high reliability and high performance software PLC for Windows® CE.

With ProConOS® Win CE a special hardware is no more needed to create a PLC, a standard hardware with Windows® CE is enough. Even a standard industrial PC with Windows® CE does meet the requirements. ProConOS® Win CE includes the loading and execution of PLC programs and supplies the debug functionalities for programming, commissioning and maintenance of PLC controlled machines and plants.

ProConOS® has been successfully used in the automation industry for more than 10 years in multiple thousands of installations. The IEC 61131 compliant ProConOS® supports realtime multitasking by using the realtime capabilities of Windows® CE, which has become an accepted realtime OS in the embedded industry. Highest performance is reached by execution of native machine code. In addition online changes are possible while the PLC program is running.

ProConOS® Win CE includes ready-to-use drivers for Hilscher field bus master cards.

Extensive interfaces allow system developers to realize manufacturer specific extensions.

## PRODUCT DESCRIPTION

### High Performance

- The integrated compiler of ProConOS® generates native machine code to be executed.
- On a Pentium 233 MHz processor 1000 instructions are executed within 10  $\mu$ s and on an ARM 300 MHz processor within 11  $\mu$ s (see more performance data on the backside).

### Realtime Behavior with Preemptive Multitasking

- ProConOS® Win CE uses the Windows® CE realtime capabilities and does support fast multitasking, interrupts and preemptive scheduling.
- By the Windows® CE design a minimum system overhead is reached creating a fast and deterministic response to external events.
- Preemptive scheduling of up to 16 PLC tasks
- For each PLC task a watchdog can be set for supervision. In case of a realtime violation an additional associated user program can be executed.
- Optionally the Windows® CE image can be extended to an interrupt-based scheduling of ProConOS® for a further improved realtime behavior.

### Non volatile PLC data

- Cyclic writing of retain data into the Windows® file system by calling function blocks.
- Adaptation to hardware specific NVRAM is possible

### Standard I/O Drivers

- Task synchronous I/O access by I/O image
- Intelligent field bus masters are supported (see list on the backside).
- Adaptation to specific I/O interfaces is possible

### Windows® File System

- Access of the Windows® file system
- A PLC typical boot behavior is achieved by storing a boot project.

### Communication , Debug and Commissioning

- Multi-client connection to several MULTIPROG® and/or OPC servers
- Breakpoints, address debug, single step, overwriting and forcing of variables, recipes
- Realtime logic analyzer
- Online Changes while the PLC is running.

## SYSTEM SPECIFICATION

<b>PC System</b>		Intel CE Device	ARM CE Device
	Processor	Min. Pentium 90	ARM 7 Core, e.g. StrongARM
	RAM	Min. 16 MByte	
	Hard disk memory	Min. 16 MByte free	
	Communication	TCP/IP and/or RS232	
	Operating systems	Windows® CE 3.0, Windows® CE 4.x	
<b>System Limits</b>	PLC program size	Depends on available memory on the target, max. 16 MByte; Standard 390 KByte	
	PLC Data size	Depends on available memory on the target, max. 16 MByte	
	PLC Retain data	128 KByte (file based; NVRAM can be supported)	
	ProConOS® size	Total memory consumption about 360 KByte	
	Tasks	Max. 16	
	I/O signals	Max. 64 KByte Input and 64 KByte Output signals	
<b>Field Bus Interfaces</b>		Supplier	Product designation
	Profibus DP	Hilscher	PC cards with Hilscher CIF driver support
	INTERBUS	Hilscher	PC cards with Hilscher CIF driver support
	CANopen	Hilscher	PC cards with Hilscher CIF driver support
	DeviceNet	Hilscher	PC cards with Hilscher CIF driver support
<b>Performance Data</b>		P 233 MMX	ARM XScale 300 MHz
	1000 instruction lines (IL) global <sup>(1)</sup> BOOL	10 µs	12 µs
	1000 instruction lines (IL) instance <sup>(2)</sup> BOOL	10 µs	12 µs
	1000 instruction lines (IL) global <sup>(1)</sup> BYTE	10 µs	11 µs
	1000 instruction lines (IL) instance <sup>(2)</sup> BYTE	10 µs	12 µs
	1000 instruction lines (IL) global <sup>(1)</sup> INT	12 µs	12 µs
	1000 instruction lines (IL) instance <sup>(2)</sup> INT	12 µs	12 µs
	1000 instruction lines (IL) global <sup>(1)</sup> DINT	23 µs	12 µs
	1000 instruction lines (IL) instance <sup>(2)</sup> DINT	10 µs	12 µs
	1000 instruction lines (IL) global <sup>(1)</sup> REAL	195 µs	249 µs <sup>(3)</sup>
	1000 instruction lines (IL) instance <sup>(2)</sup> REAL	190 µs	263 µs <sup>(3)</sup>

<sup>(1)</sup> Resource global variables

<sup>(2)</sup> Function block instance variables

<sup>(3)</sup> Without Floating Point Unit

## SCOPE OF SUPPLY

- Software on CD ROM for ProConOS® Win CE
- License agreement with softkey for one runtime license of ProConOS® Win CE
- ProConOS® Manual, ProConOS® Win CE Manual and ProConOS® CIF Driver Manual
- Installation Guide, Application Guide and Quick Start Guide

## ORDERING INFORMATION

Order number	Designation
1-2033-1201-300-000	ProConOS 3.3 Win CE 3.0/Intel
1-2033-1201-402-000	ProConOS 3.3 Win CE 4.2/Intel <sup>(1)</sup>
1-2033-1201-310-000	ProConOS 3.3 Win CE 3.0/ARM
1-2033-1201-412-000	ProConOS 3.3 Win CE 4.2/ARM <sup>(1)</sup>

<sup>(1)</sup> Further Windows® CE versions on request

## PRODUCT RELATED TOOLS

Order number	Designation
1-4020-1201-101-E00	ProConOS OPC-Server 2.0 Desktop
1-4020-1201-300-E00	ProConOS OPC-Server 2.0 Win CE 3.0/Intel
1-4020-1201-401-E00	ProConOS OPC-Server 2.0 Win CE 4.1/Intel
1-4020-1201-310-E00	ProConOS OPC-Server 2.0 Win CE 3.0/ARM
1-4020-1201-412-E00	ProConOS OPC-Server 2.0 Win CE 4.2/ARM
On request	ProConOS Developer Toolkit Win CE

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