



EMBEDDED PLC

PROCONOS® 4.0

VxWORKS INTEL

ProConOS® VxWorks Intel is a high reliability and high performance embedded PLC.

ProConOS® VxWorks Intel creates a powerful PLC together with an Intel based hardware and a running VxWorks. Even a standard industrial PC with VxWorks does meet the requirements. ProConOS® VxWorks 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 VxWorks, which is a leading 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® VxWorks Intel includes ready-to-use drivers for Hilscher and Phoenix Contact field bus master cards.

Extensive interfaces allow system developers to realize manufacturer specific extensions.

A full customization is possible when using the ProConOS® Developer Toolkit.

PRODUCT DESCRIPTION

High Performance

- The integrated compiler of ProConOS® generates native machine code to be executed.
- On an Athlon 1 GHz processor 1000 instructions are executed within 1 μ s (see more performance data on the backside).

Realtime Behavior with Preemptive Multitasking

- ProConOS® uses the VxWorks WIND® Microkernel realtime capabilities and does support fast multitasking, interrupts and preemptive scheduling.
- By the microkernel 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.

Non volatile PLC data

- Cyclic writing of retain data into the VxWorks 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

VxWorks File System

- Access of the VxWorks 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
- Nearly unlimited online changes while the PLC is running, such as adding or deleting of variables and POU's or the modification of program code and task properties

SYSTEM SPECIFICATION

PC System	Processor	Min. Pentium 90		
	RAM	Min. 8 MByte, depending on BSP		
	Hard disk memory	Min. 4 MByte free		
	Communication	TCP/IP and/or RS232		
	Operating systems	VxWorks 5.4, VxWorks 5.5, VxWorks 6.4		
System Limits	PLC program size	Depends on available memory on the target, max. 16 MByte; default 390 KByte		
	PLC Data size	Depends on available memory on the target, max. 16 MByte		
	PLC Retain data	128 KByte (file based)		
	ProConOS® size	Total memory consumption about 450 KByte		
	Tasks	Max. 16		
	I/O signals	Max. 64 KByte Input and 64 KByte Output signals		
Field Bus Interfaces		Supplier	Product designation	
	Profibus DP	Hilscher	CIF 30 PB, CIF 104 PB	
	INTERBUS	Hilscher	CIF 30 IBM, CIF 104 IBM	
	CANopen	Hilscher	CIF 30 COM, CIF 104 COM	
	DeviceNet	Hilscher	CIF 30 DNM, CIF 104 DNM	
	INTERBUS	Phoenix Contact	IBS PC ISA SC/I-T	No.: 2719234
	INTERBUS	Phoenix Contact	IBS PC 104 SC-T	No.: 2721701
	INTERBUS	Phoenix Contact	IBS PCI SC/I-T	No.: 2725260
Performance Data		P 233 MMX	P III 550	Athlon 1GHz
	1000 instruction lines (IL) global BOOL	10 μ s	2 μ s	1 μ s
	1000 instruction lines (IL) instance BOOL	10 μ s	2 μ s	1 μ s
	1000 instruction lines (IL) global BYTE	10 μ s	2 μ s	1 μ s
	1000 instruction lines (IL) instance BYTE	10 μ s	2 μ s	1 μ s
	1000 instruction lines (IL) global INT	12 μ s	6 μ s	1 μ s
	1000 instruction lines (IL) instance INT	12 μ s	3 μ s	1 μ s
	1000 instruction lines (IL) global DINT	23 μ s	8 μ s	3 μ s
	1000 instruction lines (IL) instance DINT	10 μ s	2 μ s	1 μ s
	1000 instruction lines (IL) global REAL	195 μ s	60 μ s	25 μ s
	1000 instruction lines (IL) instance REAL	190 μ s	48 μ s	24 μ s

SCOPE OF SUPPLY

- Software on CD ROM for ProConOS® VxWorks Intel
- License agreement with softkey for one runtime license of ProConOS® VxWorks Intel
- ProConOS® Manual and ProConOS® VxWorks Manual as PDF files
- ProConOS® CIF Driver Manual and ProConOS® INTERBUS-G4 Driver Manual as PDF files
- Installation Guide, Application Guide and Quick Start Guide as PDF files

ORDERING INFORMATION

Order number	Designation
1-2040-1201-500-000	ProConOS 4.0 VxWorks 5.4/Intel
1-2040-1201-501-000	ProConOS 4.0 VxWorks 5.5/Intel
1-2040-1201-502-000	ProConOS 4.0 VxWorks 6.4/Intel

PRODUCT RELATED TOOLS

Order number	Designation
1-4021-1201-101-E00	ProConOS OPC-Server 2.1 Desktop
1-2040-2001-500-E00	ProConOS 4.0 Developer Toolkit VxWorks 5.4/Intel
1-2040-2001-501-E00	ProConOS 4.0 Developer Toolkit VxWorks 5.5/Intel
1-2040-2001-502-E00	ProConOS 4.0 Developer Toolkit VxWorks 6.4/Intel

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