

# CAN/CANopen/ DeviceNet Interface Boards

Active Interface Boards  
for Every Application

## Your Requirement

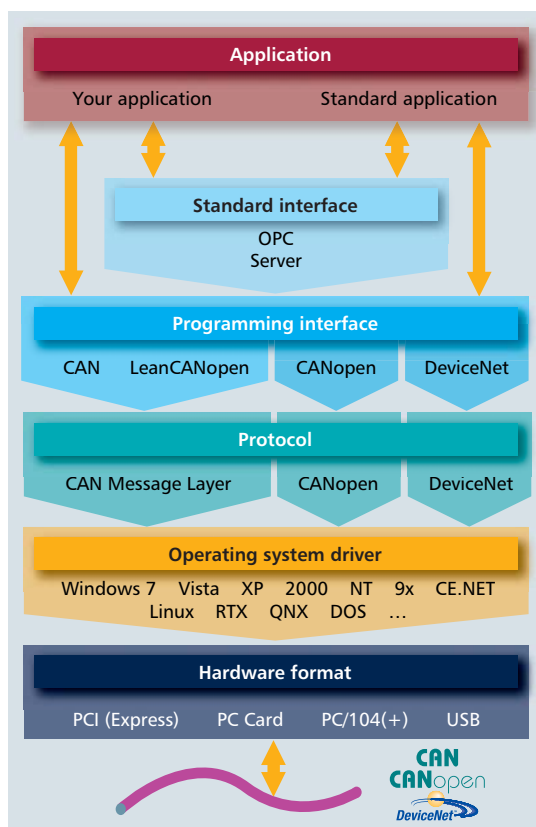
You need to quickly and easily connect your PCs to CAN, CANopen or DeviceNet. And you want to support the latest standards – while achieving the highest performance at the best price.

## Our Solution

Softing offers CAN, CANopen and DeviceNet interface boards for a wide range of applications - from fast and compact controls, to analysis tools, parameterization tools and visualization PCs, through to customized specialty applications.

## The Right Board for You

The CAN API included with the product provides access to any CAN data - either sequentially buffered or as a current process image. Firmware is available for CANopen and DeviceNet which processes the protocol in real-time directly on the card and independent of the PC. For less time-critical applications, Lean-CANopen provides a free, fully operational CANopen interface.



Flexible integration of interface boards in your application

## Product Information



Whichever protocol version you need: choose the ideal option from a variety of hardware formats, operating system drivers, protocols and application interfaces.

## Your Benefits

- Common programming interface for all hardware formats
- Top performance through onboard microcontrollers
- Local buffering and preprocessing to ease the workload of the PC
- Fast integration thanks to a simple user interface that is customized to fit the protocol
- Software drivers for a wide range of operating systems
- Numerous sample applications for various development environments and programming languages
- Customer-specific adaptations for optimal integration in your target system
- Engineering services to assist during integration

## Our Experience

Benefit from our extensive experience with fieldbus systems and our large install-base. Softing is an independent company and a leader in providing key technology components to manufacturers of fieldbus devices. We actively participate in all major fieldbus standard working groups and take pride in continually improving our offer to meet new requirements. At the same time we ensure backwards compatibility so your investment with us includes the opportunity to enhance your existing product with the latest technology.



CAN protocol and available APIs	PCI Express (single channel) <sup>1)</sup>	PCI Express (dual channel)	PCI (single channel)	PCI (dual channel)	PCI (single channel) DeviceNet	PC/104plus (single channel) <sup>2)</sup>
CAN V2.0 (11/29 bit IDs)	✓	✓	✓	✓	✓	✓
CAN-API	✓	✓	✓	✓	✓	✓
LeanCANopen-API <sup>3)</sup>	✓	✓	✓	✓	✓	✓
CANopen-API <sup>4)</sup>			✓	✓	✓	-
DeviceNet-API <sup>5)</sup>	-	-	-	-	✓	-
<b>CAN bus connection</b>						
Connector	9 pin D-Sub male			5 pin Open Style		9 pin D-Sub male on a ribbon cable
# of channels	1	2	1	2	1	1
Galvanically isolated	✓	✓	✓	✓	✓	✓
Physical layer	ISO 11898-2 (CAN high speed)					
Supports different physical layers	-	ISO 11898-3 (fault tolerant), piggy-back			-	ISO 11898-3 (fault tolerant), on request
<b>PC Interface</b>						
Interface	PCI Express		PCI			PC/104plus (PCI)
Dual port memory	512 kbytes		4 kbytes			512 kbytes
Interrupts	Plug and Play					
<b>Environment / Dimensions</b>						
Operating temperature	0 °C .. +70 °C <sup>6)</sup>					
Storage temperature	-20 °C .. +70 °C					
Relative humidity	< 90%, non-condensing					
Dimensions [mm]	168 x 69	168 x 103	160 x 100			90.2 x 96
<b>Power supply</b>						
Supply voltage	3.3V / 12V (± 5%) DC			5V (± 5%) DC		
Current consumption [mA]	typ. 500 / 60	typ. 500 / 90	typ. 380	typ. 410	typ. 340	typ. 300 / 150
<b>Certificates</b>						
CE	✓	✓	✓	✓	✓	✓
FCC	✓	✓	✓	✓	✓	✓
<b>Drivers available for <sup>7)</sup></b>						
Windows 7	✓	✓	✓	✓	✓	✓
Windows Vista	✓	✓	✓	✓	✓	✓
Windows XP	✓	✓	✓	✓	✓	✓
Windows Server 2008	✓	✓	✓	✓	✓	✓
Windows Server 2003 R2	✓	✓	✓	✓	✓	✓
Windows 2000	✓	✓	✓	✓	✓	✓
Windows Embedded CE 6.0	-	-	✓	✓	✓	✓
Linux	✓	✓	✓	✓	✓	✓
Miscellaneous			A), C), D)	A), C), D)	A)	
Part number	<b>CAN-PRO1-PCIE /LP<sup>1)</sup></b>	<b>CAN-PRO2-PCIE</b>	<b>CAN-AC1-PCI</b>	<b>CAN-AC2-PCI</b>	<b>CAN-AC1-PCI/DN</b>	<b>CAN-PRO1-PC104+</b>

<sup>1)</sup> The single channel PCI Express is also available with a low profile slot bracket.

<sup>2)</sup> also available as PCI/104

<sup>3)</sup> LeanCANopen is a CANopen master implementation that runs on the PC on top of a CAN interface board. It supports single channel and dual channel boards.

<sup>6)</sup> Ambient temperature of the board inside the PC

<sup>7)</sup> Please visit our home page at [www.softing.com](http://www.softing.com) for a complete listing of all available drivers. Couldn't find a driver that suits your needs? Please do not hesitate to contact us with your requirements



PC/104plus (dual channel) <sup>2)</sup>	PC/104plus (dual channel) extended Temperature range <sup>2)</sup>	PC/104 (single channel)	PC/104 (dual channel)	PC/104 (dual channel) extended Temperature range	PC/104 (single channel) DeviceNet	PC Card (dual channel)	USB (single channel)
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
-	-	✓	✓	✓	✓	✓	-
-	-	-	-	-	✓	✓	-
9 pin D-Sub male on a ribbon cable					5 pin Open Style on a ribbon cable	9 pin D-Sub male	
2	2	1	2	2	1	2	1
✓	✓	✓	✓	✓	✓	-	✓
ISO 11898-2 (CAN high speed)							
ISO 11898-3 (fault tolerant), on request		-	-	-	-	ISO 11898-3 (fault tolerant), variant	
PC/104plus (PCI)		PC/104			PC Card (PCMCIA)		USB
512 kbytes		4 kbytes					-
Plug and Play		5, 9, 10, 11, 12, 15			Plug and Play		-
0 °C .. +70 °C <sup>6)</sup>	-40 °C .. +85 °C <sup>6)</sup>	0 °C .. +70 °C <sup>6)</sup>	-40 °C .. +85 °C <sup>6)</sup>	-40 °C .. +85 °C <sup>6)</sup>	0 °C .. +70 °C <sup>6)</sup>	0 °C .. +55 °C	
-20 °C .. +70 °C	-40 °C .. +85 °C	-20 °C .. +70 °C	-40 °C .. +85 °C	-40 °C .. +85 °C	-20 °C .. +70 °C	-20 °C .. +70 °C	
< 90%, non-condensing							
90.2 x 96		90.2 x 96			PC Card Type II		110 x 55 x 25
5V / 3.3V (± 5%) DC		5V (± 5%) DC					
typ. 350 / 150	typ. 350 / 150	typ. 500	typ. 570	typ. 570	typ. 500	typ. 300	typ. 300
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓
		A), B), C), D), E)	A), B), C), D), E)	A), B), C), D), E)	A)	A)	-

CAN-PRO2-PC104+	CAN-PRO2-PC104+XT	CAN-AC1-104	CAN-AC2-104	CAN-AC2-104I	CAN-AC1-104/DN	CANcard2	CANusb
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<sup>4)</sup> The CANopen API is interfacing with a CANopen master protocol stack that is executed directly on the interface board. The CANopen API communicates over channel 1 only (the second channel on a dual channel board is not used!)

<sup>5)</sup> The DeviceNet API is interfacing with a DeviceNet master and slave protocol stack that is executed directly on the interface board. The DeviceNet API communicates over channel 1 only (the second channel on a dual channel board is not used!)

<sup>A)</sup> Win NT/ME/98/95    <sup>B)</sup> DOS    <sup>C)</sup> Win CE.NET 4.x/5.0  
<sup>D)</sup> Ardence RTX    <sup>E)</sup> QNX: optional, no free download

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## Product Information

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Active Interface Boards for Every Application**

## Supplemental Software Products for Softing CAN Boards

Our CAN interface boards work with a wide variety of software interfaces and standard applications, such as:

- Protocol APIs
- OPC servers for CANopen
- CAN Bus Analyzer with various options

The following table provides an overview of the availability of individual products and their order numbers.

### Always the right solution

CAN interfaces from Softing are being used successfully in many industry sectors:

- Mechanical engineering
  - Medical technology
  - Drive technology
  - Robotics
  - Packaging machines
  - Automotive engineering
  - Railway technology
  - Traffic control
  - Electronics development
  - Measurement technology
  - Simulation technology
  - Research
- and many more

Order number for accessories	Protokoll APIs			OPC Server	Bus Analyzer	
	CANopen per protocol firmware	DeviceNet per protocol firmware	CANopen PC-based (LeanCANopen)	CANopen OPC server with configurator	X-ANALYSER full version	X-ANALYSER economy version
PCI	CAN-OPN/API	–	free <sup>1)</sup>	OPC-CANOPEN	X-ANALYSER	X-ANALYSER-ECO
PCI DeviceNet	–	CAN-DN/API	–	–	X-ANALYSER	X-ANALYSER-ECO
PCI Express	–	–	free <sup>1)</sup>	OPC-CANOPEN	X-ANALYSER	X-ANALYSER-ECO
PC/104plus	–	–	free <sup>1)</sup>	OPC-CANOPEN <sup>2)</sup>	–	–
PC/104	CAN-OPN/API	–	free <sup>1)</sup>	OPC-CANOPEN	X-ANALYSER	X-ANALYSER-ECO
PC/104 DeviceNet	–	CAN-DN/API	–	–	X-ANALYSER	X-ANALYSER-ECO
PC Card	CAN-OPN/API	CAN-DN/API	free <sup>1)</sup>	OPC-CANOPEN	X-ANALYSER	X-ANALYSER-ECO
USB	–	–	free <sup>1)</sup>	OPC-CANOPEN <sup>2)</sup>	X-ANALYSER	X-ANALYSER-ECO

<sup>1)</sup> download from [www.softing.com](http://www.softing.com) <sup>2)</sup> in preparation



### Additional accessories

Assembly kit and strain relief for the PC card interface slot (increases mechanical stability)

### Order number

PCCARD2-PFX