Fieldbus

Total Solutions
for CAN Bus & PROFIBUS

ICP DAS

Quality
Efficiency
Security

ICP DAS Co.,Ltd.

CE Approved

RoHS

ICP DAS Co.,Ltd

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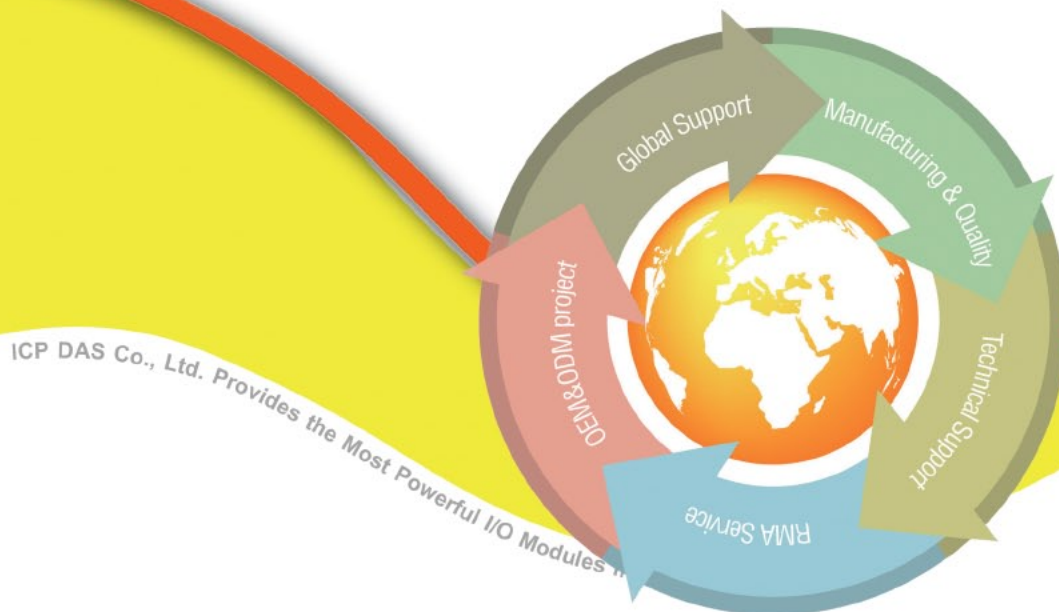Website: http://www.icpdas-usa.com/

Professional Provider of High Quality Industrial Data Acquisition and Control Products

About Company

ICP DAS which was founded in 1993 is a company focusing on R&D. With the wide and fast application, and the extension to the field of home and entertainment, the trend of combining data acquisition, industrial control, and communication to one unit has been obvious; Hence again, the embedded-control system has become the spot light of research and application.

ICP DAS has devoted to the advances of remote I/O controllers, distributed I/O modules, and I/O data acquisition boards. Besides, ICP DAS has its own solutions to industrial automation and completes after-care services. Recently, we are aggressive to develop a series of programmable automation controller, web-related products and motion-control systems.

Global Support

Manufacturing & Quality

OEM&ODM project

Technical Support

RMA Service

ICP DAS Co., Ltd. Provides the Most Powerful I/O Modules

Advantages of ICP DAS

- From research to produce, ICP DAS keeps the stability of products by the series of process.

- The strong R&D teams not only solve clients' problems but also satisfy customers' requirements.

- We would like to work with our customers wholeheartedly to develop OEM or ODM products.

- ICP DAS have developed the service networks over the world, our clients can get excellent service and technical support.

- Up to now, we have got ISO 9002 certification and several innovative patents, and some new patents are pending.

- To partner with major software such as ISaGRAF, DASYLab, SoftPLC, Think & Do Software, MATLAB, Indusoft, Windows CE and so on, our wide range of products offers a total Industrial-controled solution.

- Our series products can compete in quality with others which come from noted company in Europe or Japan , in less cost.

Energy Monitoring

Environmental Monitoring System

Intelligent Transportation System

Factory Automation

Chemical Engineering

Machine Automation

Security Monitoring System

Telecommunication

The Intelligent Building

Human Entertainment Automation

Vertical Market Focus

Table of Contents

CAN Bus Series

PROFIBUS Series

Selection Guide

Fieldbus in ICP DAS

Fieldbus is an industrial network system for real-time distributed control. It is a way to connect instruments in a manufacturing plant. Fieldbus works on a network structure which typically allows daisy-chain, star, ring, branch, and tree network topologies with many major advantages to all applications of automation. ICP DAS offers fieldbus products different with different protocols applying in various industrial applications.

ICP DAS offers the widest range of fieldbus compatible products, covering the entire scope of process and manufacturing automation: industrial Ethernet, Modbus, CAN bus, and PROFUBUS applications.
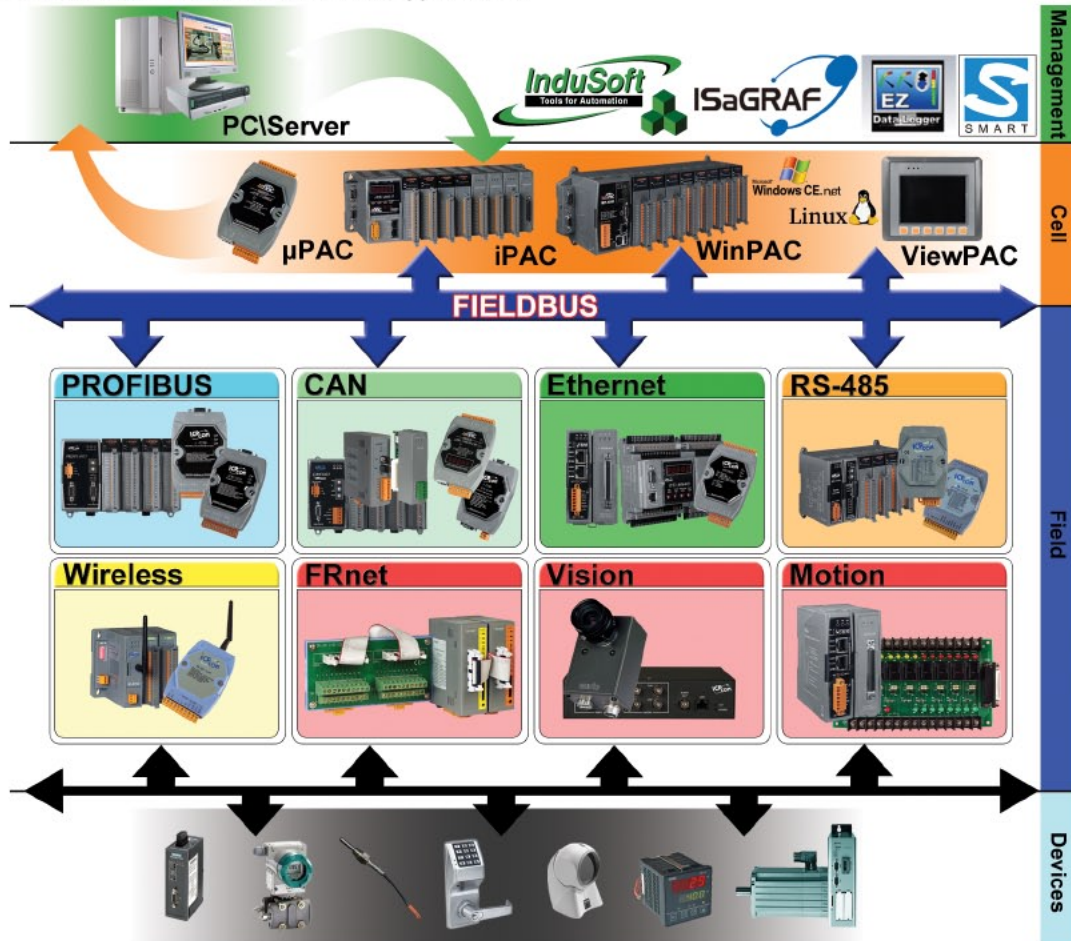
ICP DAS provides converters, gateways, remote I/O, PC-based and PAC solutions of fieldbus. Users can choose different solutions depending on various field applications. For DevciceNet and CANopen protocols, we also have slave and master products. However, ICP DAS can offer the total solutions for users at the same time.

PC-based solutions   PAC solutions   Converter solutions   Gateway solutions   Remote I/O solutions

PC-Based Solutions

For the PC-Based Solutions, ICP DAS proveds the CAN communication boards for PCI, Universal PCI, PCI Express, PCI-104, and PC-104+ interfaces. They can be applied in lots of IPC to implement the CAN/DeviceNet/CANopen applications. In addition, these products provide DeviceNet/CANopen protocol tool for users to develop the DeviceNet/CANopen applications easily.

Model	Description
CAN	
PISO-CAN200/400-D/T	2/4-port CAN bus PCI interface card with CANopen master library
PISO-CAN200/400U-D/T	2/4-port CAN bus Universal PCI interface board with CANopen master library
PISO-CAN200E-D/T	2-port CAN bus PCI Express x1 interface board
PISO-CM100U-D/T	Intelligent 1-port CAN bus universal PCI interface board
PCM-CAN200	2-port CAN bus PCI-104 module
PCM-CAN200P	2-port CAN bus PC-104+ module

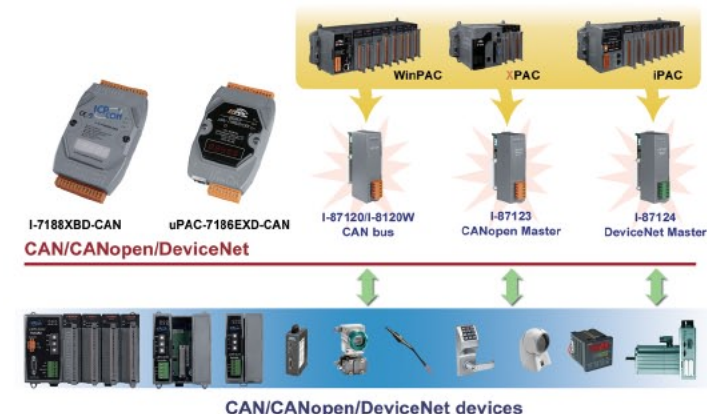| Model	Description
CANopen	
PISO-CPM100U-D/T	Intelligent 1-port CANopen master universal PCI interface board
PISO-CPS100U-D/T	Intelligent 1-port CANopen slave universal PCI interface board
DeviceNet	
PISO-DNM100U-D/T	Intelligent 1-port DeviceNet master universal PCI interface board
PISO-DNS100U-D/T	Intelligent 1-port DeviceNet slave universal PCI interface board
-D is for D-sub connector and -T is for 5-pin screw Terminal connector	

PAC-Based Solutions

PAC series of ICP DAS is the powerful controllers for industrial applications. To build the CAN/CANopen/DeviceNet PAC applications, the PAC-Based solution products can satisfy the different requests of industry.

Model	Description
CAN PACs	
I-7188XBD-CAN	CAN bus programmable automation controller with 1 RS-232, 1 RS-485 bus. 1 DI and 1 DO.
uPAC-7186EXD-CAN	CAN bus programmable automation controller with 1 Ethernet, 1 RS-232, 1 RS-485
I-8120W(PAC)	Intelligent 1-port CAN bus Communication module with parallel bus for WinPAC/LinPAC
I-87120(PAC)	Intelligent 1-port CAN bus Communication module with serial bus for WinPAC/LinPAC/iPAC
CANopen master module	
I-87123	Stand alone CANopen master module with one CAN port for WinPAC/LinPAC/iPAC series
DeviceNet master module	
I-87124	Stand alone DeviceNet master module with one CAN port for WinPAC/LinPAC/iPAC series

I-7188XBD-CAN   uPAC-7186EXD-CAN
CAN/CANopen/DeviceNet

WinPAC   XPAC   iPAC

I-87120/I-8120W CAN bus
I-87123 CANopen Master
I-87124 DeviceNet Master

CAN/CANopen/DeviceNet devices

Repeater & Bridge & Converter Solutions

ICP DAS offers a large variety of CAN&PROFIBUS products including physical coupling of two or more segments of a CAN bus system. They can be used to implement tree or star topologies as well as for long drop lines and complex network structures.

Model	Description
CAN Bus Converter, Repeater, Bridge	
I-2532	CAN bus to fiber converter
I-2533	CAN/fiber bridge
I-7531	CAN bus isolated repeater
I-7532	2-port CAN bus bridge
I-7530	RS-232/CAN bus converter
I-7530A	Intelligent RS-232/485/422 to CAN bus converter
I-7565	USB to 1-port CAN bus converter
I-7565-H1	High Speed USB to 1-port CAN bus converter
I-7565-H2	High Speed USB to 2-port CAN bus converter
I-7565-DNM	USB/1-port DeviceNet master converter
I-7565-CPM	USB/1-port CANopen master converter
I-7540D	Ethernet to CAN/RS-232/RS-485 bus converter
PROFIBUS Converter	
I-7550	PROFIBUS to RS-232/422/485 converter

Repeaters and bridges are used to establish a physical coupling of two or more segments of a CAN bus system. They can be used to implement tree or star topologies as well as for long drop lines. In addition, network segments can be electrically decoupled using a galvanically isolated repeater.
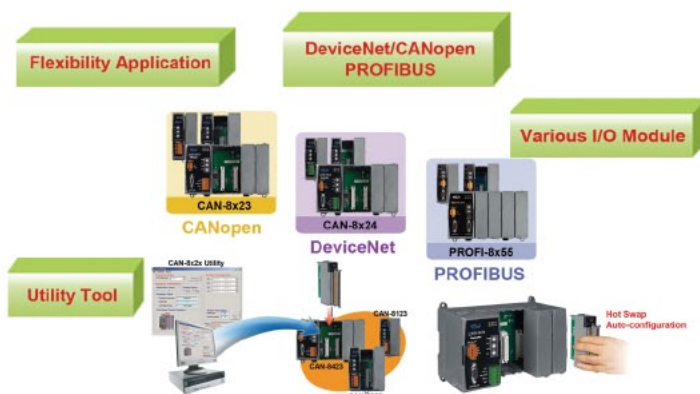
Gateway Solutions

Stand alone industrial gateways are designed to connect excisting devices to fieldbus and industrial Ethernet. Easy to use and setup, no programming is required.

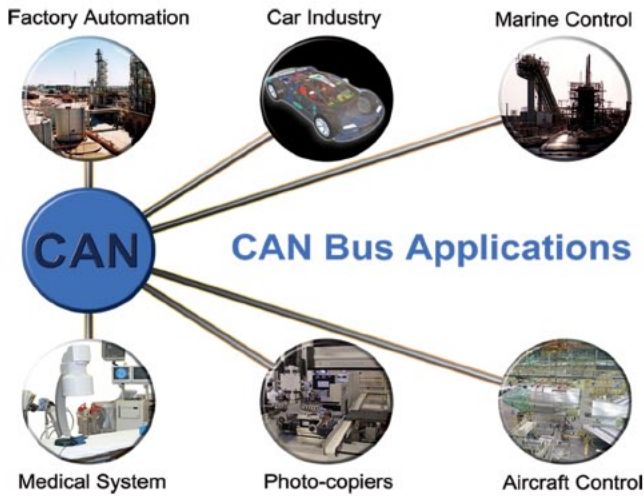| Model	Description
CANopen Gateway Solutions	
I-7231D	CANopen slave / DCON master gateway
I-7232D	CANopen slave / Modbus RTU master gateway
GW-7433D	CANopen master / Modbus TCP server gateway
DeviceNet Gateway Solutions	
I-7241D	DeviceNet slave / DCON master gateway
I-7242D	DeviceNet slave / Modbus RTU master gateway
I-7243D	DeviceNet master / Modbus TCP server gateway
PROFIBUS Gateway Solutions	
GW-7552	PROFIBUS/Modbus gateway
GW-7553	PROFIBUS/Modbus TCP gateway

Remote IO Solutions

The solutions are designed for DeviceNet/CANopen/PROFIBUS remote I/O system.

Model	Description
CANopen Remote Solutions	
CAN-8123	CANopen remote IO unit with 1 I/O slot
CAN-8223	CANopen remote IO unit with 2 I/O slots
CAN-8423	CANopen remote IO unit with 4 I/O slots
DeviceNet Remote Solutions	
CAN-8124	DeviceNet remote IO unit with 1 I/O slot
CAN-8224	DeviceNet remote IO unit with 2 I/O slots
CAN-8424	DeviceNet remote IO unit with 4 I/O slots
PROFIBUS Remote Solutions	
PROFI-8155	PROFIBUS remote I/O Unit with 1 I/O slot
PROFI-8255	PROFIBUS remote I/O Unit with 2 I/O slots
PROFI-8455	PROFIBUS remote I/O Unit with 4 I/O slots
PROFI-8855	PROFIBUS remote I/O Unit with 8 I/O slots

Flexibility Application

DeviceNet/CANopen PROFIBUS

Various I/O Module

CAN-8x23 **CANopen**
CAN-8x24 **DeviceNet**
PROFI-8x55 **PROFIBUS**

Utility Tool

Hot Swap Auto-configuration

CAN Bus Applications

Factory Automation · Car Industry · Marine Control

CAN

CAN Bus Applications

Medical System · Photo-copiers · Aircraft Control

ICP DAS has been developing various CAN (Controller Area Network) / DeviceNet / CANopen products for several years include PCI interface card, converter, PAC, gateway, and CAN remote I/O. We also provide complete CAN hardware solutions and useful tools for CAN design, analysis and testing of CAN bus / DeviceNet / CANopen applications.
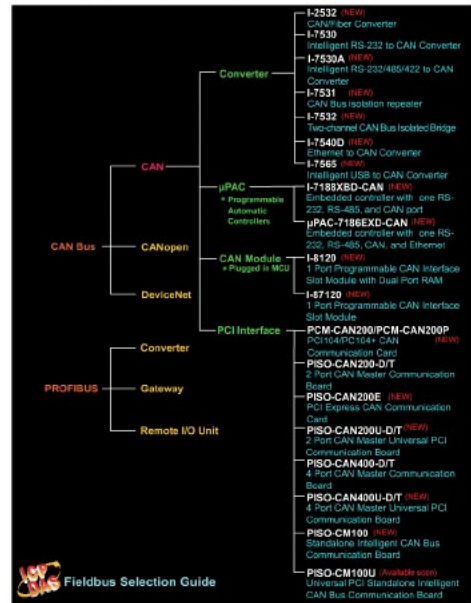

CAN Bus Application
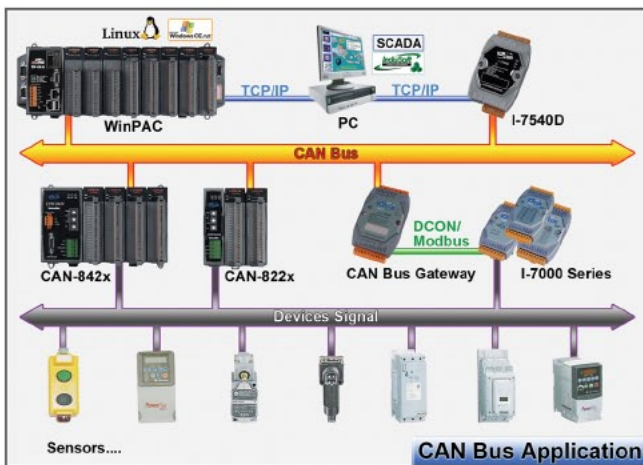
CAN Bus Introduction

The Controller Area Network (CAN) is a serial communication way, which efficiently supports distributed real-time control with a very high level of security. It provides the error process mechanisms and message priority concepts. These features can improve the network reliability and transmission efficiency. Furthermore, CAN supplies the multi-master capabilities, and is especially suited for networking "intelligent" devices as well as sensors and actuators within a system or sub-system.

| Application Layer	DeviceNet, CANopen J1939...etc
Object Layer	Message Filtering, Message and Status Handing
Transfer Layer	Fault Confinement, Message Framing and Signaling, Message Validation, Arbitration, Error Detection, Transfer Rate and Timing
Physical Layer	Signal Level and Bit Representation, Transmission Medium

## CAN Series Selection Guide

CANopen Introduction

CANopen is a CAN-based application layer protocol. It was developed as a standardized embedded network with highly flexible configuration capabilities. CANopen was designed for motion-oriented machine control networks, such as handling systems. By now it is used in many various fields, such as medical equipment, off-road vehicles, maritime electronics, public transportation, building automation, etc.

The CANopen specifications cover application layer and communication profile, as well as a framework for programmable devices, recommendations for cables, connectors, SI units, and prefix representations. The application-layer as well as the CAN-based profiles are implemented in software.
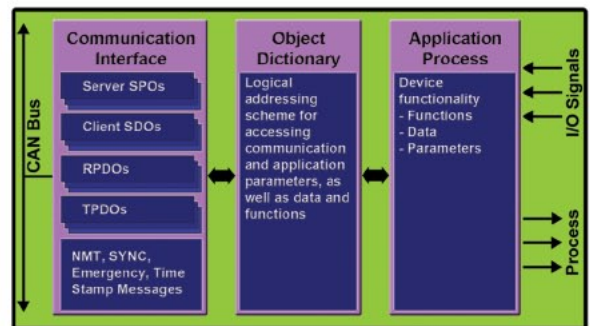

CANopen Series Selection Guide
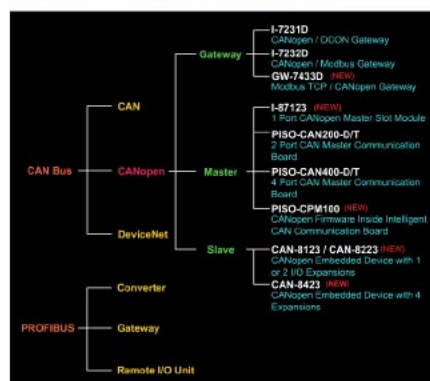
DeviceNet Introduction

The DeviceNet™ network is a flexible open and low-cost option which you can use to connect industrial devices to a network and to eliminate costly and time-consuming hardwiring. Direct connectivity improves communication and provides device-level diagnostics or easily accessible through hardwired I/O interfaces.

DeviceNet is an open standard, it saves time and money at start-up—a key advantage for OEMs. Because it uses a trunk line/drop line topology, a single DeviceNet cable provides power and communication signal to all devices on the network. This significantly reduces the amount of wiring required and greatly simplifies installation. Adding and removing devices from the network is a simple process—a key advantage for end-users. You do not need to add or remove any wires. Simply connect or disconnect the device to or from the trunk line and configure the scan list. It really is that easy.

DeviceNet Series Selection Guide
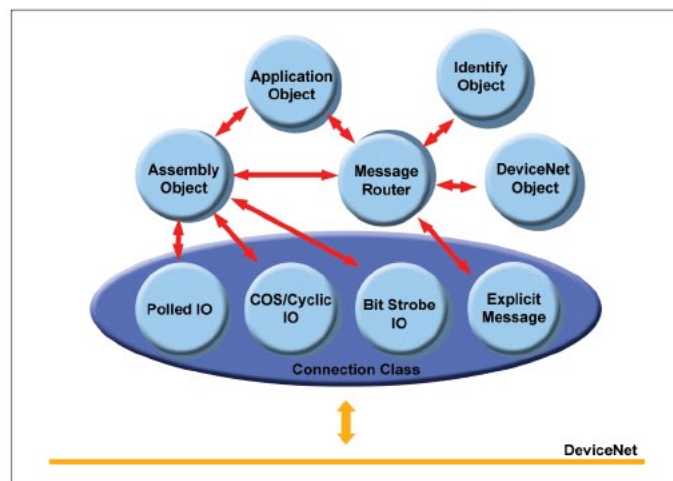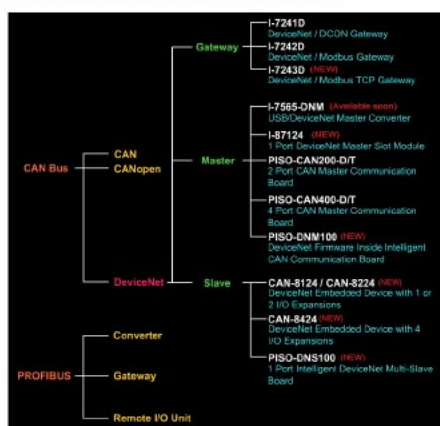
## The Best Choice

Solutions for various CAN applications

ICP DAS provides converters, gateways, PC-based, and PAC solutions. Users can choose different solutions depending on the application field. For DeviceNet and CANopen protocols, we also have slave and master products. In any case, we can offer the total solutions for users at the same time.

Free software and tool support

All softwares and tools for our products are free. There are various library and ActiveX tools for VB, VC, BCB and Delphi development environments. For SCADA software, we also provide InduSoft, LabVIEW and DASYLab drivers. These rich tools can help users to establish the system easily.

High protection hardware design

Because these industrial products are used in the harsh environment, DC/DC power supply to galvanically isolated bus drivers and photo-isolation protection on bus are built-in hardware design. Each product also provides 4 kV ESD protection. In advance, all products of ICP DAS pass CE, FCC and so forth.
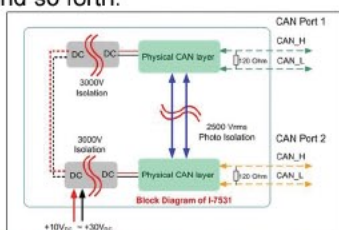
ODM and Technology Service

ICP DAS has focus on CAN products for several years and accumulates the rich development experience on CAN bus field. Meanwhile, we also have finished various CAN projects for our customers. For the software and hardware, we always provide the best to our customers.

Good in harsh environment

Products in ICP DAS can be operated in wide temperature & humidity, provided high reliability.

-25°C ~ 75°C

DIN-Rail Mounting

RoHs and WEEE Directives

ICP DAS will support customers by providing RoHS compliant products for many existing products together with new products. However in some OEM cases outside the scope of the RoHS Directive, we will also maintain normal supplies of lead-based products for customers placing their electrical and electronic equipment onto the market without EU. ICP DAS identifies lead-free RoHS compliant products using a unique part number and by adding a CR to the product name.
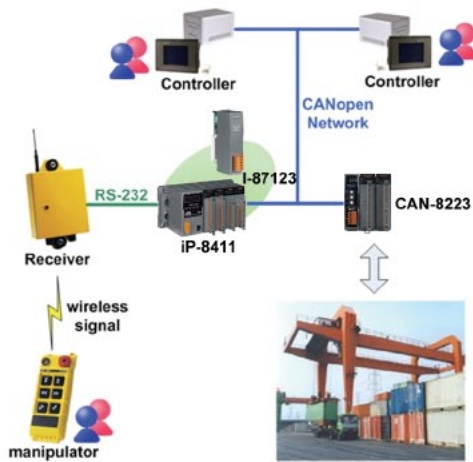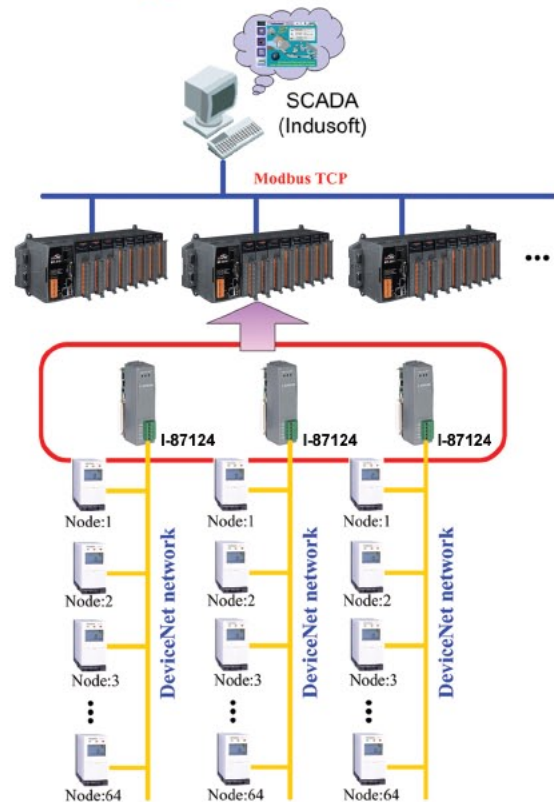
Application References

Tire Pressure Monitor System

PAC Application

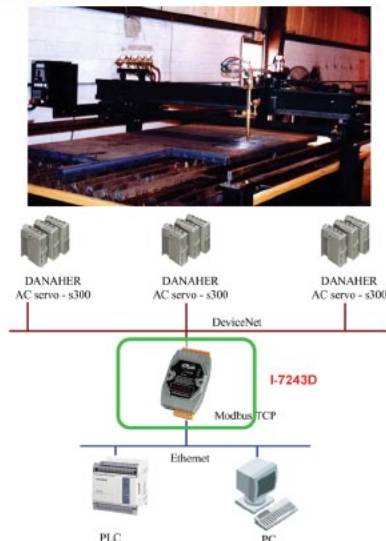## Machine Traveler System – CANopen Application

Semiconductor Gas Detection System – DeviceNet Application
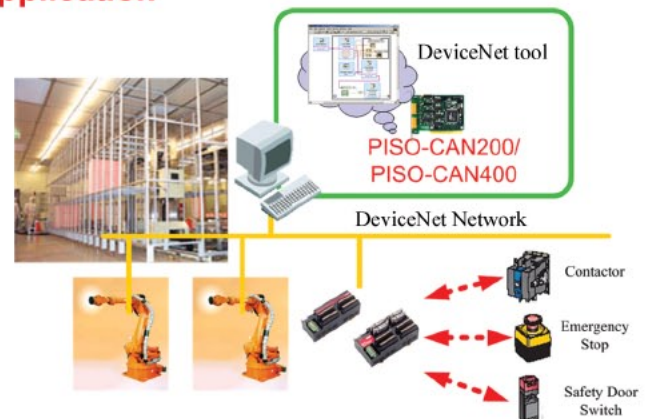

Motion Automation with PLC – CANopen Application



Plasma Cutting Machines – DeviceNet Application

Electronic Movement System – DeviceNet Application

ICP DAS has been developing various CAN products for several years, including PCI interface cards, converters, PACs and expansion modules. ICP DAS holds CAN conference, exhibition and training course all of the world. We also help customers to resolve various CAN technology problems. In addition, we can provide CAN bus solution for our customers.
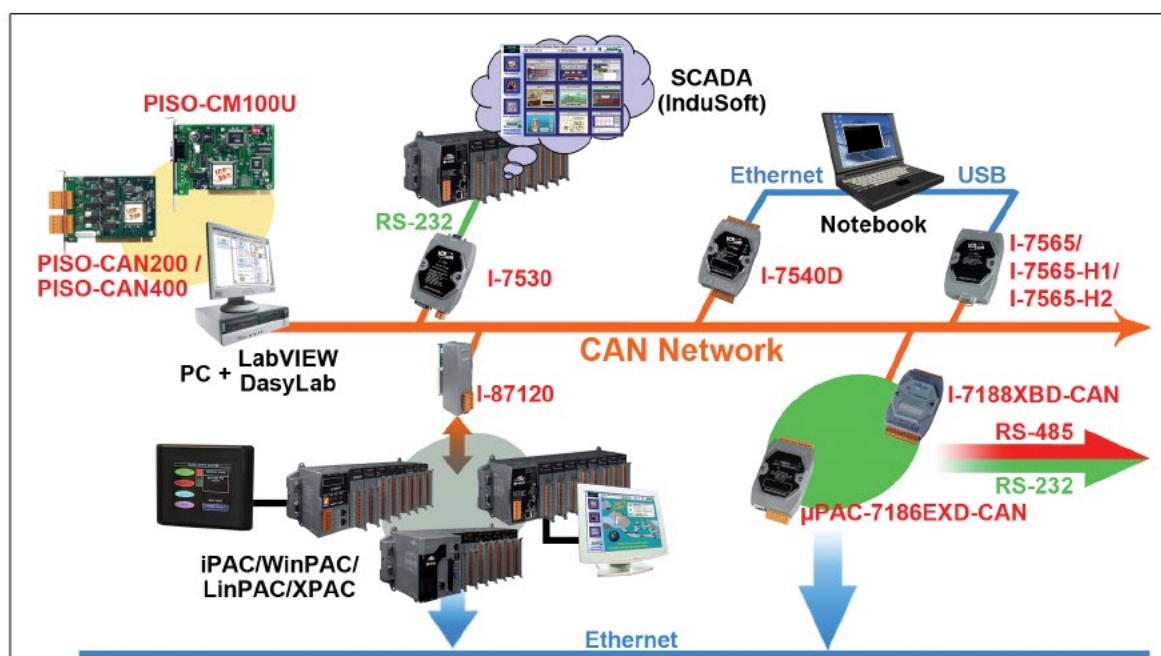

CAN Bus Features

Multi-master

When the CAN bus is free, any unit may transmit a message. When the bus is free any unit may start to transmit a message. The unit with the message of highest priority to be transmitted gains bus access.

Safety

In order to achieve the utmost safety of data transfer, powerful measures for error detection, signaling and self-checking are implemented in every CAN node.

Speed & Distance

Baud (bit/sec)	Ideal Bus Length(m)
1M	25
800k	50
500k	100
250k	250
125k	500
50k	1000
20k	2500
10k	5000

Arbitration

If two or more nodes start transmitting messages at the same time, the arbitration mechanism is applied to guarantee that one of these messages can be sent successfully according to the priority.
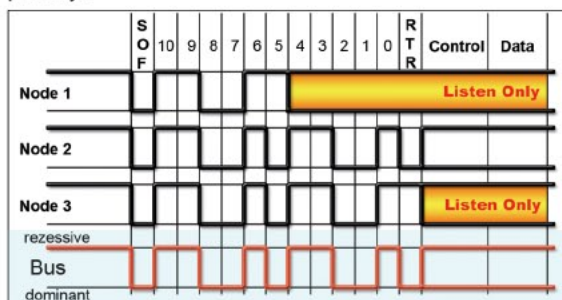
Product Key Features

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo couple isolation on the CAN side
- Built-in jumper or DIP switch for 120 Ω terminator resistor of CAN bus
- Built-in watchdog

CAN Series in ICP DAS

CAN Bus converter series

ICP DAS provides several kinds of communication interfaces for CAN bus. There are RS-232, RS-485, RS-422, Ethernet, USB and fiber interfaces for various CAN applications. Also, the CAN series bridge and repeater are ICP DAS's CAN series products to enhance the CAN applications flexibility.

CAN Bus PAC series

For the different CAN protocol requirements, we have the solutions in PAC style. The uPAC-7186EXD-CAN and I-7188XBD-CAN are the standalone palm size controllers with 1 CAN channel based on MiniOS7 operation system . I-8120W and I-87120 are CAN modules applied in WinPAC, LinPAC and iPAC of ICP DAS. They can be programed to apply in any application.

CAN communication board series

For the PC-based CAN solutions, we have PCI, Universal PCI, PCI express, PCI-104 and PC-104+ interface CAN cards. There are not only various CAN libraries for different development tools but also the CAN utility to implement the simple CAN applications. Furthermore, PISO-CM100U is inside 80 MHz 186 CPU to apply in high performance system.

CAN Bus Converters

Intelligent RS-232 to CAN Converter

I-7530

I-7530 is designed to unleash the power of CAN bus via RS-232 communication method. It converts messages between CAN and RS-232 networks.

CE FC RoHS

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- OEM for ISO 11898-3 standard (Low Speed Fault Tolerance)
- 3 kV galvanic isolation
- One CAN and RS-232 ports
- Configure CAN and RS-232 parameters by utility
- Support transparent communication mode
- Mount easily on DIN-Rail

Intelligent RS-232/485/422 to CAN Converter

I-7530A

I-7530A is designed to unleash the power of CAN bus via RS-232/485/422 communication method. It correctly converts messages between CAN and RS-232/485/422 networks.

CE FC RoHS

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- OEM for ISO 11898-3 standard (Low Speed Fault Tolerance)
- 3 kV galvanic isolation
- One CAN, RS-232, RS-422, and RS-485 ports
- Configure CAN and serial COM parameters by utility
- Support transparent communication mode
- Mount easily on DIN-Rail

## 2-port CAN Bus Isolated Repeater

I-7531

I-7531 is a CAN repeater used to establish a physical coupling of two or more segments of a CAN bus system. Users can implement tree or star topologies as well as for long drop lines with I-7531. Connecting via I-7531.

RoHS

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- 3 kV galvanic isolation among the power supply and two CAN channels
- Two CAN ports
- Auto baud rate detection
- Up to 100 nodes on each CAN port
- Removable terminal block
- Mount easily on DIN-Rail
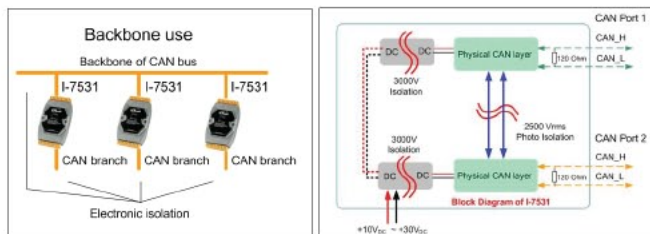
2-port CAN Bus Bridge

I-7532

I-7532 is a CAN bridge to coupling different segments which can be different baud rates. It also can isolate the electronic distance between both sides. That can protect the nodes of another side from the other.

RoHS

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- 3 kV galvanic isolation between two CAN ports
- Two CAN ports
- Configure CAN Baud of each channel by rotary switch
- Up to 100 nodes on each CAN port
- Removable terminal block
- Mount easily on DIN-Rail

CAN Bus Converters

Ethernet to CAN/RS-232/RS-485 Converter

I-7540D

I-7540D is a solution that enables CAN networks to be coupled together over the Internet/Ethernet, whereby remote monitoring and control is possible. The CAN-Ethernet gateway controls network communication and makes a transparent CAN-based application interface available to the user.
The device supports a transparent, protocol-independent transfer of the CAN messages, thus it would be implemented into a wide range of possible applications.

VxComm Virtual Comm

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- 10/100 Base-TX Ethernet port
- 1 kV galvanic isolation
- One CAN, RS-232, RS-485, and Ethernet ports
- Configure CAN, RS-232 and RS-485 parameters by web page
- Provide maximum 25 Ethernet clients connection
- Support Virtual COM technology

General Application
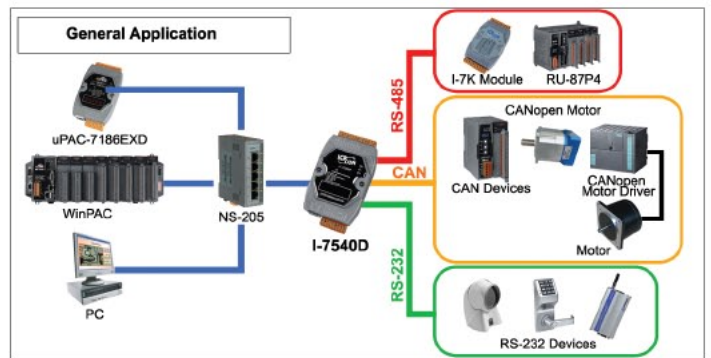
Extend CAN Communication Distance
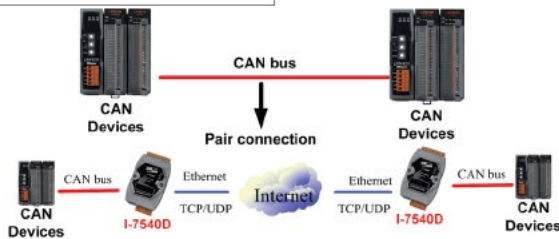
Multicast Communication
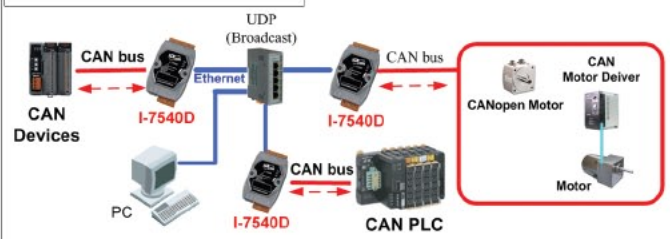
CAN to Fiber Converter

I-2532

I-2532 is a CAN to fiber optic converter that secures data transmission by using fiber optic transmission to provide immunity from EMI/RFI interference, which is designed to extend high CAN bus signals onto fiber optic cables.

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in DIP switch for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- 3 kV galvanic isolation
- Fiber Port: ST (Multi-mode)
- Wave Length: 850 nm
- Fiber Cable: 50/125, 62.5/125, 100/140 μm
- One CAN and one fiber ports
- Configure CAN baud rate by rotary switch


CAN to Fiber Bridge

I-2533

I-2533 offers natural resistance to EMI/RFI noise and surges that commonly interfere with electrical networks on factory floors and in industrial environments. It can extend the CAN bus communication distance, and the baud rate of the two CAN networks could be different.

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Philips 82C250 CAN transceiver
- Support baud rate up to 500 kbps
- Built-in DIP switch for 120 Ω terminator resistor of CAN bus
- Up to 100 CAN nodes on each channel
- Fiber Port: ST (Multi-mode)
- Wave Length: 850 nm
- Transmission distance up to 1 km on each CAN port
- Removable terminal block, Mount easily on DIN-Rail
- The baud rate of each channel can be different for highly flexibility
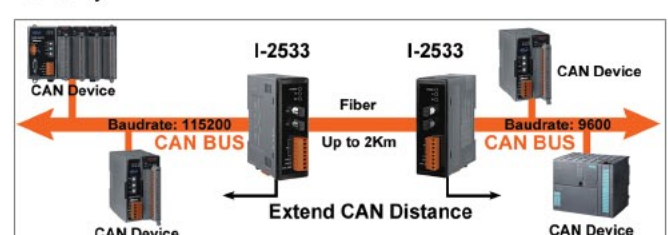
CAN Bus Converters

USB to 1-port CAN Bus Converter

I-7565

I-7565 is a cost-efficient device for coupling the CAN-bus to the PC using the standard USB interface. Nowadays the interface is present in every new PC and is supported by the MS-Windows 98, Me, 2000 and XP operating systems. If you establish the connection between the I-7565 and the PC during the runtime of the computer, the PC automatically loads the relevant device driver (hot plug & play).
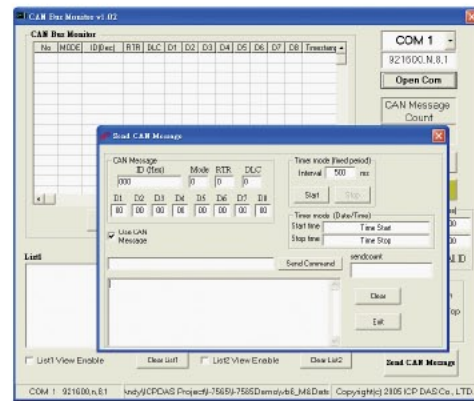
OS Support: Window 98/2K/XP/Vista, Linux

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- Fully compliant with USB 1.1/2.0(Full Speed)
- 3 kV galvanic isolation
- Powered by USB port
- One CAN and USB channels
- Support Windows 98/2K/XP/Vista and Linux drivers
- Mount easily on DIN-Rail

CAN Monitor Tool

- Show CAN message as hex or decimal format.
- CAN message time stamp
- Easy-to-use data logger for the diagnosis of CAN Networks and recording of process data.
- Send the user-defined CAN message manually or cyclically.

High Speed USB to 1-port CAN bus Converter

I-7565-H1

I-7565-H1 is a cost-efficient device for coupling one CAN channel to USB interface. With its powerful 32-bit microcontroller, transmission and reception processes can be controlled loss-free.

OS Support: Window 98/2K/XP/Vista, Linux

- Fully compatible with the ISO 11898-2 standard
- Support CAN2.0A and B
- No external power supply (powered by USB)
- Integrated with one CAN bus interface
- Programmable CAN bus baud rate from 5 kbps to 1 Mbps
- Built-in jumper for 120 Ω terminal resister of CAN bus
- 2500 Vrms photo-coupler isolation on the CAN side
- 3 kV galvanic isolation among the power supply
- Support CAN bus acceptance filter configuration
- Provide configuration utility to transmit/receive CAN messages
- Max. data flow for a single channel: 3000 fps (standard frame)
- Removable terminal block, Mount easily on DIN-Rail

High Speed USB to 2-port CAN bus Converter

I-7565-H2

I-7565-H2 is a cost-efficient device for coupling two CAN channel to USB interface. With its powerful 32-bit microcontroller, transmission and reception processes can be controlled loss-free.

OS Support: Window 98/2K/XP/Vista, Linux

- Fully compatible with the ISO 11898-2 standard
- Support CAN2.0A and B
- No external power supply (powered by USB)
- Integrated with two CAN bus interface
- Programmable CAN bus baud rate from 5 kbps to 1 Mbps
- Built-in jumper for 120 Ω terminal resister of CAN bus
- 2500 Vrms photo-coupler isolation on the CAN side
- 3 kV galvanic isolation among the power supply
- Support CAN bus acceptance filter configuration
- Provide configuration utility to transmit/receive CAN messages
- Max. data flow for a single channel: 3000 fps (standard frame)
- Removable terminal block, Mount easily on DIN-Rail
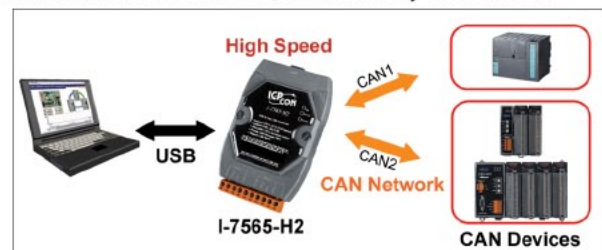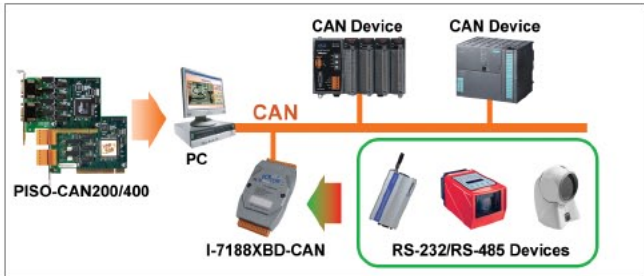
CAN Programmable Automation Controller

I-7188XBD-CAN

I-7188XBD-CAN are powered by 80188-40 processor with 512 KB of static RAM, and 512 KB bytes of Flash memory. Uses can program their application program flexibly with C/C++ language because of the built-in MiniOS7 operation system.

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- 1 kV galvanic isolation
- One CAN, RS-232, and RS-485 ports
- 40 MHz 186 CPU inside
- 7-segment LED display
- Provide C/C++ function libraries and demos
- Inherit all features of I-7188XBD except expansion bus

## CAN/Ethernet Programmable Automation Controller

uPAC-7186EXD-CAN

μPAC-7186EXD-CAN PACs are powered by 80188-80 processor with 512 KB of static RAM, and 512 KB of Flash memory. Uses can program their application program flexibly with C/C++ language because of the built-in MiniOS7 operation system.

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- 1 kV galvanic isolation
- One CAN, RS-232, RS-485, and Ethernet ports
- 80 MHz 186 CPU inside
- 7-segment LED display
- Provide C/C++ function libraries and demos
- Inherit all features of I-7186EXD except expansion bus
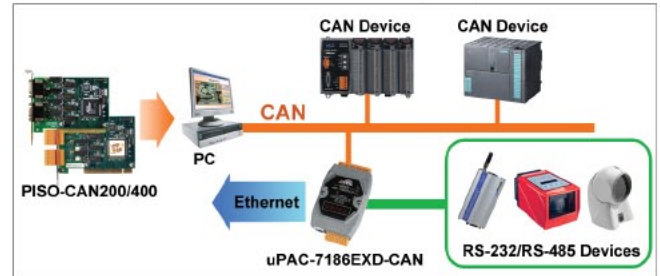
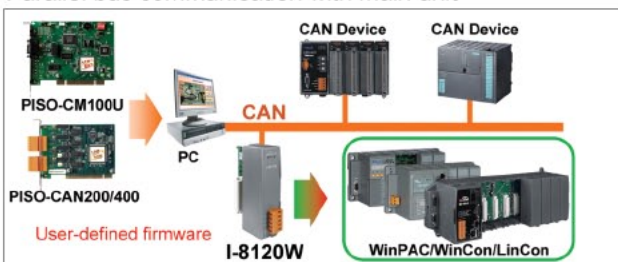## Standalone CAN Interface Expansion Module

I-8120W

OS support: WinPAC/LinPAC

I-8120W has one CAN communication port with 5-pin screw terminal connector, and is useful for a wide range of CAN applications. Users can design the various applications between different communication protocols.

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in DIP switch for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- 3 kV galvanic isolation
- One CAN channel expansion for WinPAC/LinPAC series main control unit
- Provide C/C++ function libraries and demos
- 80 MHz 186 CPU inside
- 8 KB DPRAM inside
- Parallel bus communication with main unit

Standalone CAN Interface Expansion Module

I-87120

OS support: WinPAC/LinPAC/iPAC

In order to expand the CAN functions of ICPDAS products, I-87120 module is developed for this purpose. However, the user-defined firmware supported by I-87120 can help users to set up the specific application easily.

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in DIP switch for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- 3 kV galvanic isolation
- One CAN channel expansion for WinPAC/LinPAC/iPAC series main control unit
- Provide C/C++ function libraries and demos
- 80 MHz 186 CPU inside
- Serial bus communication with main unit
- Allow user-designed firmware
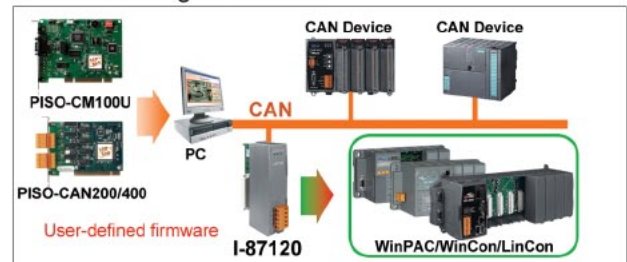
CAN Communication Boards

PCI CAN Communication Board

PISO-CAN200/400

PISO-CAN200/400 has two or four independent CAN bus communication ports with 5-pin screw terminal connector or 9-pin D-Sub connector.

OS support: Windows 2K/XP/Vista CE FC

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Comply with 33 MHz 32-bit 5 V PCI bus
- 3 kV galvanic isolation
- 2/4 independent CAN channels
- Direct memory mapping to the CAN controller
- Provide VB, VC++, Delphi, Borland C++ builder demos
- Support LabVIEW and DASYLab driver

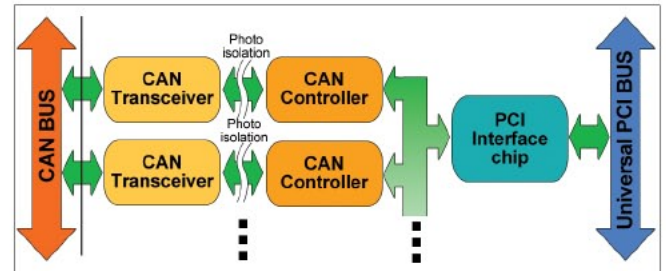## Universal PCI CAN communication board

PISO-CAN200/400U

PISO-CAN200/400U with universal PCI interface has two or four independent CAN bus communication ports with 5-pin screw terminal connector or 9-pin D-Sub connector.

OS support: Windows 2K/XP/Vista CE FC

- Universal PCI card, supports both 5 V and 3.3 V PCI bus.
- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Comply with 33 MHz 32-bit 5 V universal PCI bus
- 3 kV galvanic isolation
- 2/4 independent CAN channels
- Direct memory mapping to the CAN controller
- Provide VB, VC++, Delphi, Borland C++ builder demos
- Support LabVIEW and DASYLab driver

PCI Express CAN Communication Board

PISO-CAN200E

The PISO-CAN200E has 2 independent CAN ports with 5-pin screw terminal connector or 9-pin D-Sub connector with PCI Express x1 bus. Every CAN channel has isolation protection circuit.
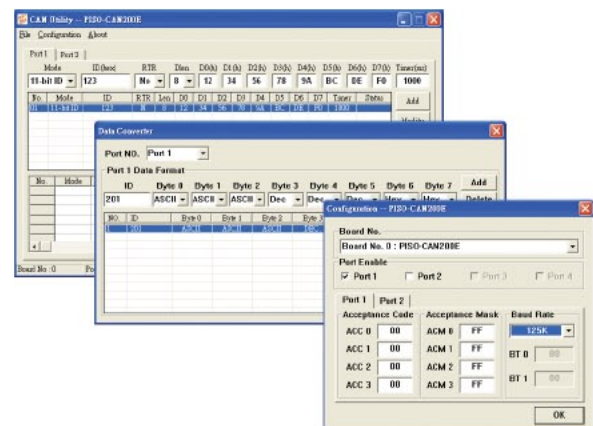
OS support: Windows 2K/XP/Vista RoHS

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- X1 link PCI Express
- 3 kV galvanic isolation
- 2 independent CAN channels
- Direct memory mapping to the CAN controller
- Provide VB, VC++, Delphi, Borland C++ builder demos
- Support LabVIEW and DASYLab driver
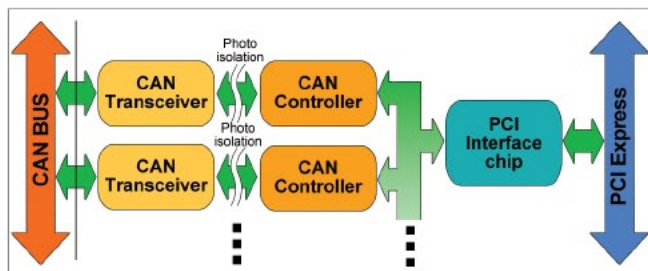
CAN Communication Board Utility

The CAN bus utility tool allows users to send/receive the CAN messages to/from CAN network easily. This utility tool can be thought as a useful tool for monitoring CAN messages or testing CAN devices on the CAN network.

- The CAN system monitor tool with PISO-CAN200/400 cards
- Can test PISO-CAN200/400 series
- Send/Receive/Record CAN messages.
- Provide cyclic transmission function
- Record the CAN messages with filter ID with time stamp
- PISO-CAN 200/400/200U/400U/200E or PCM-CAN 200/ PCM-CAN200P
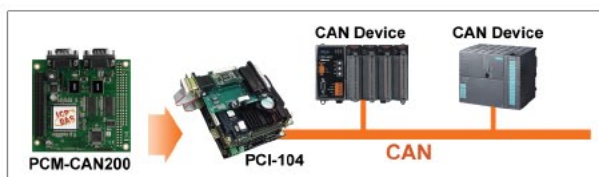
PCI-104 CAN Communication Board

PCM-CAN200 has 2 independent CAN ports with 9-pin D-Sub connector compatible PCI-104 specification.

PCM-CAN200 — OS support: Windows 2K/XP/Vista/CE

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- PCI-104 compliant
- 3 kV galvanic isolation
- 2/4 independent CAN ports
- Direct memory mapping to the CAN controller
- Provide VB, VC++, Delphi, Borland C++ builder demos
- Support LabVIEW and DASYLab driver

PCM-CAN200 → PCI-104 — CAN — CAN Device CAN Device

PC-104+ CAN communication Board

PCM-CAN200 has 2 independent CAN ports with 9-pin D-Sub connector compatible PC-104+ specification.

PCM-CAN200P — OS support: Windows 2K/XP/Vista/CE

- PC-104+ compliant
- 9-pin D-Sub connector
- Compatible with CAN 2.0A and B
- Fully compatible with ISO 11898-2 standard
- Support CAN bard rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN bus
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- 3 kV galvanic isolation
- 2 independent CAN ports
- Direct memory mapping to the CAN controller
- Provide VB, VC++, Delphi, BC++ demos
- Driver support Windows 2K/XP/WinCE and Vista

PCM-CAN200P → PC-104+ — CAN — CAN Device CAN Device
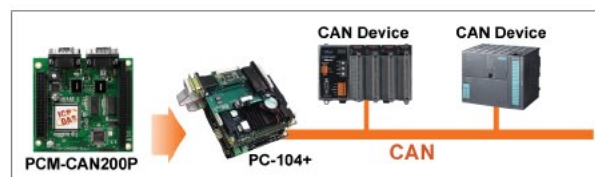
Standalone CAN Communication Board

The 16-bit on-board microcontroller allows, among many other features, the filtering, preprocessing, and storage (with timestamp) of CAN messages as well as the real-time transmission of CAN messages.

PISO-CM100 — OS support: Windows 2K/XP/Vista

- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- 3 kV galvanic isolation
- One CAN channel
- 80 MHz 186 CPU inside
- Timestamp of CAN message with at least ±1 ms precision
- Allow user-designed firmware
- Provide VB, VC++, Delphi, Borland C++ builder demos
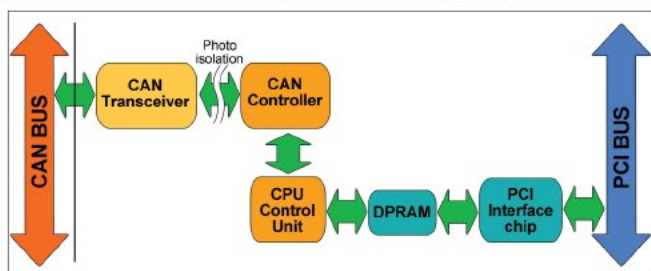

Intelligent CAN Communication Board

PISO-CM100U built-in 80 MHz, 186 CPU represents a very powerful CAN board to process the real-time CAN messages providing the open structure for users to program in it to satisfy the high performance system.

**PISO-CM100U** — OS support: Windows 2K/XP/Vista

- Universal PCI card, supports both 5 V and 3.3 V PCI bus
- Compatible with CAN specification 2.0A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Comply with 33 MHz 32-bit 5 V (or universal) PCI bus
- 3 kV galvanic isolation
- 2/4 independent CAN ports
- Direct memory mapping to the CAN controller
- Provide VB, VC++, Delphi, Borland C++ builder demos
- Support LabVIEW and DASYLab driver
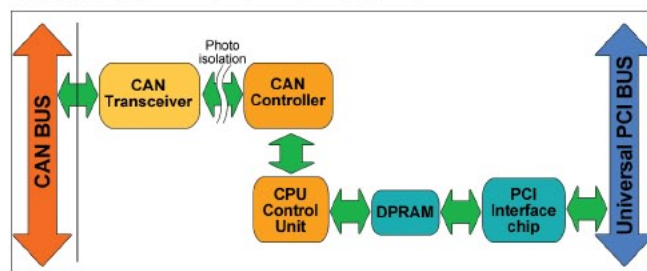
CANopen Series

CANopen is a kind of network protocol based on CAN bus and has been used in various applications, such as vehicles, industrial machines, building automation, medical devices, maritime applications, restaurant appliances, laboratory equipment & research.

ICP DAS has been developing CAN based-CANopen protocol products for several years. Our products include PCI interface, gateway, CANopen IO and CANopen module for ICP DAS's WinPAC/LinPAC/iPAC. We also help customers to resolve various CANopen network technology problems. In addition, we can provide various CANopen solutions for users.
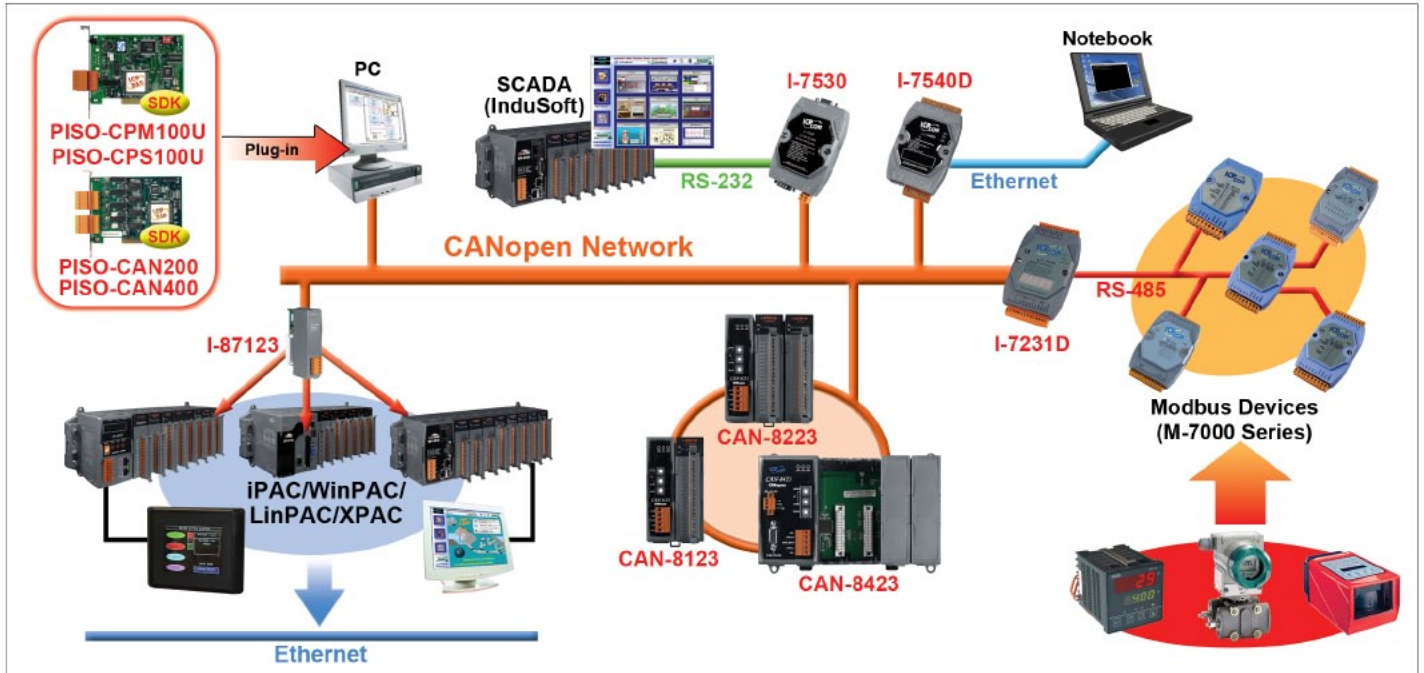

CANopen Series Key Features

- Up to 128 nodes can be participated in the same CAN network
- CANopen Version: DS-301 v4.01
- Device Profile: DSP-401 v2.0
- Error Control: Node Guarding protocol
- Emergency Message: Yes
- 2500 Vrms photo couple isolation on the CAN side
- Built-in jumper or DIP switch for 120 Ω terminator resistor of CAN bus
- Built-in watchdog

CANopen Series in ICP DAS

CANopen remote I/O unit series

CAN-8x23 series are specially designed for the slave device of CANopen protocol with 1/2/4 I/O slot. There are various modules can be chosen to use. Also, these products support Hot-swap function for maintaining conveniently.

CAN-8x23
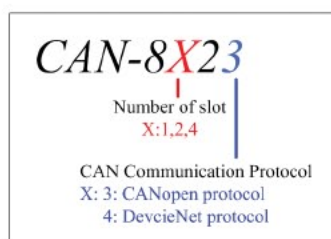
CANopen Gateway series

The Modbus TCP/RTU and DCON protocol gateways are ready for users. The series can be used to integrate different protocol system. Users also easily update their old system to the CANopen system with the series. They are I-7231D, I-7232D, GW-7433D.

| I-7231D | I-7232D | GW-7433D |

CANopen master series

CANopen master series are I-87123 for PACs and PISO-CPM100U for PC. In the series, there is CANopen master kernel inside. So, they can be used in high performance system. For the economical solution, we provide the PISO-CAN card with the CANopen master library.

| I-87123 | I-7565-CPM |
| PISO-CAN200/400 | PISO-CPM100U | PISO-CPS100U |

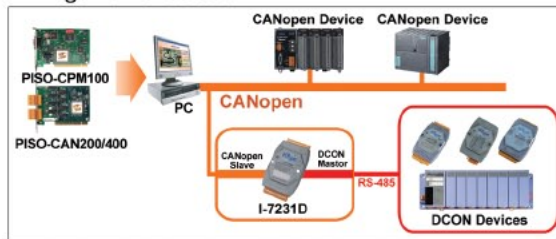## CANopen Slave / DCON Master Gateway

I-7231D

By way of using I-7231D to convert the electric signals and messages, the DCON I/O modules can be upgraded to the CANopen protocol based on the CAN bus.

- CANopen Version: DS-301 v4.01
- Device Profile: DSP-401 v2.0
- Error Control: Node Guarding protocol
- Emergency Message: Yes
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- NMT: Slave
- PDO: Event-triggered, RTR, cyclic, acyclic SYNC and dynamic PDO Mapping
- No of SDOs: 1 server, 0 client
- Product EDS file dynamically by utility
- Support max 15 I-7000/I-87K I/O series modules
- 1 kV galvanic isolation

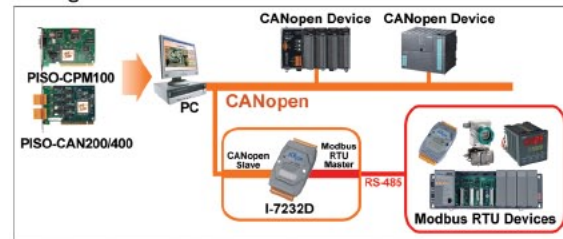## CANopen Slave / Modbus RTU Master Gateway

I-7232D

I-7232D is one of ICP DAS CAN bus products. The device allows a CANopen master to access the Modbus slave devices on some Modbus RTU network.

- CANopen Version: DS-301 v4.01
- Device Profile: DSP-401 v2.0
- Error Control: Node Guarding protocol
- Emergency Message: Yes
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- NMT: Slave
- PDO: Event-triggered, RTR, cyclic, acyclic SYNC and dynamic PDO Mapping
- No of SDOs: 1 server, 0 client
- Product EDS file dynamically by utility
- Support max 10 Modbus RTU slaves
- 1 kV galvanic isolation

## CANopen Master / Modbus TCP&RTU Server Gateway

GW-7433D

GW-7433D is a CANopen master device. It supports PDO and SDO functions to communicate with slave devices. From the view of Modbus TCP & RTU network, GW-7433D plays a Modbus TCP server or Modbus RTU slave role to receive the commands from Modbus TCP client or Modbus RTU master, and to reply the information to Modbus TCP client or Modbus RTU slave. We provide Utility software for users to configure the parameters of CANopen salves or GW-7433D. When GW-7433D boots up, it will collect the necessary information from all slaves which are predefined in the GW-7433D by using Utility. The following figure shows the application architecture for the GW-7433D.

- CANopen Version: DS-301 v4.01
- Device Profile: DSP-401 v2.0
- Error Control: Node Guarding protocol
- Emergency Message: Yes
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- NMT: Master
- PDO: Event-triggered, RTR
- Support maximum 50 TxPDOs, 50 RxPDOs, 15 SDOs to SDO server
- Allow 5 Modbus TCP/RTU masters to access GW-7433D simultaneously
- Configuration by utility via Ethernet
- 1 kV galvanic isolation

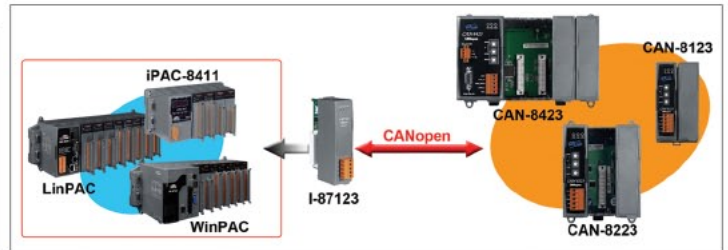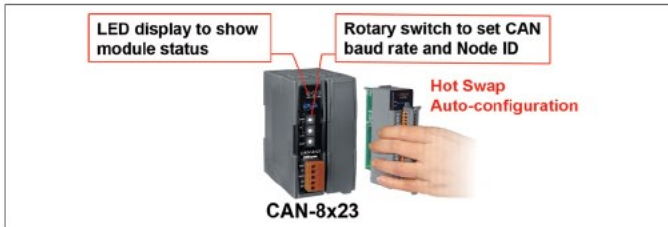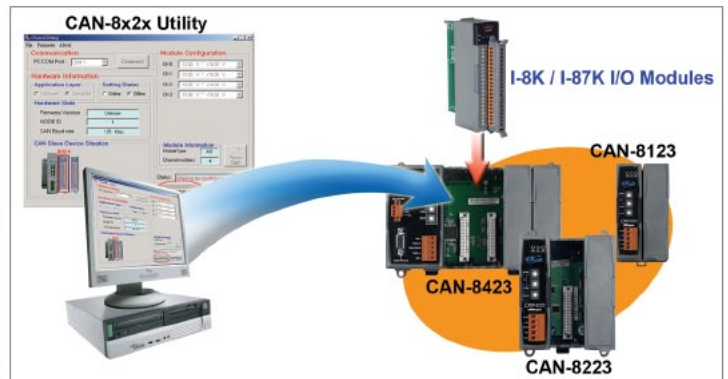|	Code	Name	Description
Modbus Commnad Support	01(0x01)	Read Coil Status	Read the ON/OFF status of discrete outputs
	02(0x02)	Read Input Status	Read the ON/OFF status of discrete inputs
	03(0x03)	Read Holding Registers	Read the binary contents of holding registers
	04(0x04)	Read Input Registers	Read the binary contents of input registers
	05(0x05)	Force Single Coils	Forces one coil in a sequence of coils
	06(0x06)	Preset Single Register	Preset an integer value into a single register.
	15(0x0F)	Force Multi Coils	Forces each coil in a sequence of coils
	16(0x10)	Preset Multi Registers	Preset value into a sequence of holding register
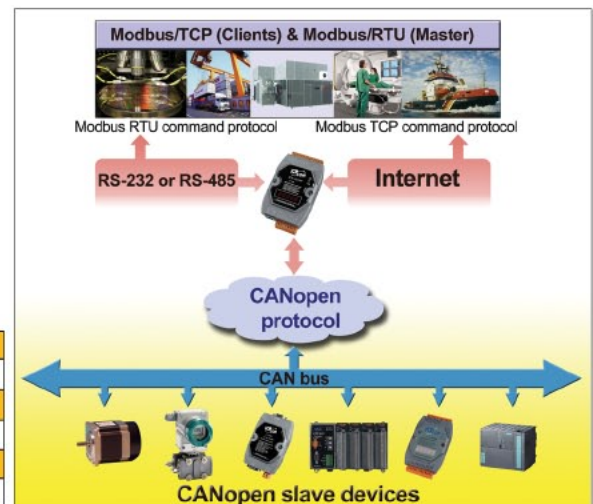
CANopen Remote I/O Unit with 1/2/4 I/O Slots

CAN-8x23

CAN-8x23 main control unit is specially designed for the slave device of CANopen protocol. It follows the CANopen Spec DS-301 V4.01 and DSP-401 V2.1, and supplies many features for users, such as dynamic PDO, EMCY object, error output value, SYNC cyclic and acyclic, … and etc. In order to expand I/O channel more flexible, an CAN-8x23 supports up to 4 slots for I/O expansion and suits with a lot of ICP DAS DI / AI / DO / AO modules. User can choose DI/DO/AI/AO modules of I-87K series or I-8000 series to fit the customized practice applications.

- CANopen Version: DS-301 v4.01
- Device Profile: DSP-401 v2.0
- Error Control: Node Guarding protocol
- Emergency Message: Yes
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- PDO Modes: Event Triggered, Remotely requested, Cyclic and acyclic SYNC
- PDO Mapping: Avaiable
- No. of SDOs: 1 server, 0 client
- Product EDS file dynamically by utility
- Provide 1/2/4 expansion slots for I-8000 or I-87K series modules
- 3 kV galvanic isolation

CAN-8x2x Utility

I-8K / I-87K I/O Modules

CAN-8123

CAN-8423

CAN-8223

LED display to show module status

Rotary switch to set CAN baud rate and Node ID

Hot Swap Auto-configuration

CAN-8x23

iPAC-8411

LinPAC

WinPAC

I-87123

CANopen

CAN-8123

CAN-8423

CAN-8223

Standalone CANopen Master Expansion Modules

I-87123

I-87123 is specially designed for the master device of CANopen protocol with many features for users, such as dynamic PDO, EMCY object, error output value, SYNC object, and etc.

- CANopen Version: DS-301 v4.01
- Device Profile: DSP-401 v2.0
- Error Control: Node Guarding protocol
- Emergency Message: Yes
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in DIP switch for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- NMT: Master
- PDO: Event-triggered, RTR, cyclic, acyclic SYNC and dynamic PDO Mapping
- One CANopen master interface expansion for WinPAC/LinPAC/iPAC series main control unit
- Provide C/C++ function libraries and demos
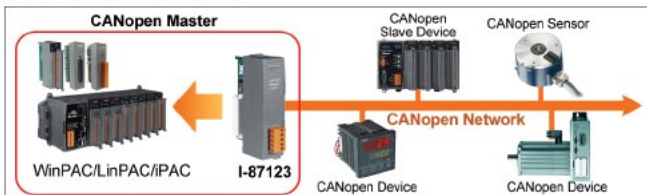- Serial bus communication
- 3 kV galvanic isolation

CANopen Master

CANopen Slave Device

CANopen Sensor

CANopen Network

WinPAC/LinPAC/iPAC   I-87123

CANopen Device   CANopen Device

USB/CANopen master converter

I-7565-CPM

I-7565-CPM is an USB to CANopen master convertor. It can use on USB slot of PC or notebook easily and does not need any extra power. I-7565-CPM can represent an economic solution of CANopen application and be a CANopen master device on the CANopen network.

- Fully compliant with USB 1.1/2.0(Full Speed)
- No external power supply is required
- CANopen Specification: DS301, version 4.02
- Baud rate(bps): 10 k, 20 k, 50 k, 125 k, 250 k, 500 k, 800 k, 1 Mbps
- NMT error control support Node Guarding protocol
- SYNC producer 1 ms ~ 65535 ms
- Support dynamic PDO / SDO segment protocol / EDS file
- Slave Node : 127 nodes max.
- Support Auto-scan slave device function
- Support on-line adding and removing devices
- Support save and load command
- Status LED: RUN, MS, NS
- Free utility to configure I-7565-CPM and update firmware
- Windows 2000/XP drivers supported

CANopen Master

CANopen Slave Device

CANopen Sensor

CANopen Network

WinPAC/LinPAC/iPAC   I-7565-CPM

CANopen Device   CANopen Device

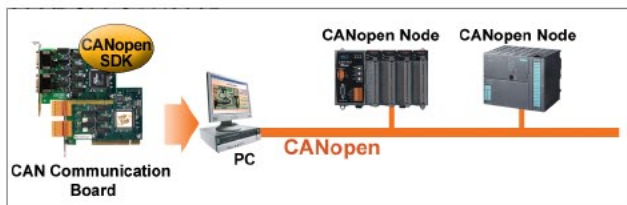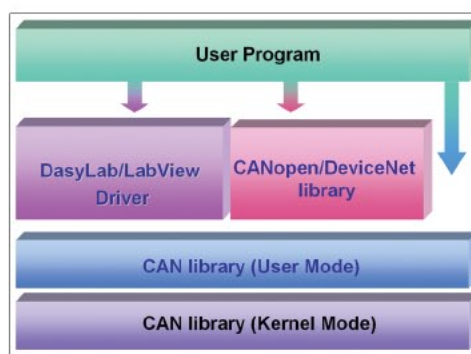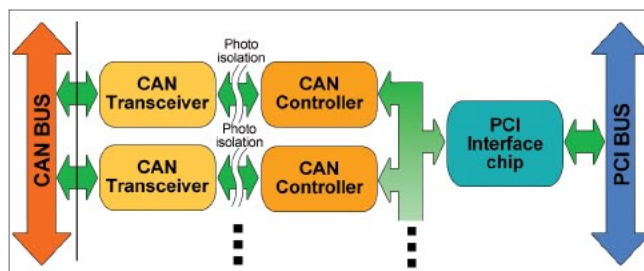## CAN Communication Board with CANopen Master Library

CANopen master

In order to apply the CANopen protocol on the PISO-CAN/200/400 servis or PCM-CAN200 easily, we provide two CANopen application tools, which are CANopen library and CANopen diagnosis application tool. If users want to develop an industrial application with CANopen protocol, the CANopen library is very helpful to be applied with the PISO-CAN200/400 series or PCM-CAN200 as the CANopen master with the features of CANopen protocol. Besides, if the monitor and diagnosis of CANopen message on the CAN network is considered, the CANopen diagnostic application tool can be used to achieve this purpose.

OS support: Windows 2K/XP/Vista

- CANopen Version: DS-301 v4.01
- Device Profile: DSP-401 v2.0
- Error Control: Node Guarding protocol
- Emergency Message: Yes
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog / NMT: Master
- PDO: Event-triggered, RTR, cyclic, acyclic SYNC and dynamic PDO Mapping
- Support 2/4 independent CAN ports
- Provide VC++,VB,Borland C++ Builder function libraries and demos
- Economic CANopen master solution
- Baud: Configuration by utility
- PISO-CAN 200/400/200U/400U/200E or PCM-CAN

## Standalone CANopen Master Communication Board

PISO-CPM100U

PISO-CPM100U gives a very powerful and economic CANopen master solution of PC-based application. With the built-in 80186 80 MHz CPU, this card can be applied in high transmission CANopen applications.

OS support: Windows 2K/XP/Vista

- Universal PCI card, supports both 5 V and 3.3 V PCI bus
- CANopen Version: DS-301 v4.01
- Device Profile: DSP-401 v2.0
- Error Control: Node Guarding protocol
- Emergency Message: Yes
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- NMT: Master
- PDO: Event-triggered, RTR, cyclic, acyclic SYNC and dynamic PDO Mapping
- Support multi-master architecture
- 80 MHz 186 CPU inside
- 3 kV galvanic isolation
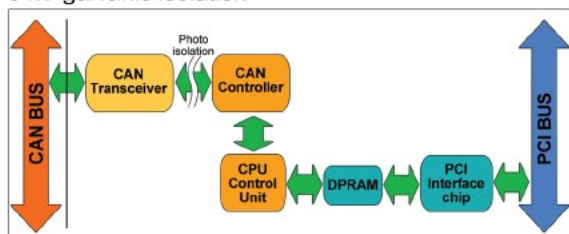
1-port Intelligent CANopen Slave Board

PISO-CPS100U

PISO-CPS100U is an especially programmable CANopen Slave board. It provides a universal PCI interface and one CAN communication port. It follows the CANopen specification DS-301 and DSP-401. With the built-in 80186 80 MHz CPU, this card can be applied in high transmission applications.

OS support: Windows 2K/XP/Vista

- Universal PCI card, supports both 5 V and 3.3 V PCI bus
- CPU: 80186 CPU, 80 MHz
- Built-in Dual-watchdog protection
- CANopen specification: DS301, version 4.02
- CANopen profile: DSP401, version 2.0
- Baud rate (bps): 10 k, 20 k, 50 k, 125 k, 250 k, 500 k, 800 k, 1 Mbps
- NMT error control support Node Guarding protocol
- SYNC consumer
- Support dynamic PDO.
- Support SDO segment protocol
- Programmable 512 bytes input data and 512 bytes output data
- Support Save and Load command
- Status LED: RUN, ERR
- Free utility to configure PISO-CPS100U and update firmware
- Produce EDS file dynamically
- Windows 2000/XP drivers supported

DeviceNet Series

DeviceNet based on the CAN bus is one of the world's leading device-level networks for industrial automation. In fact, more than 40% of end users surveyed by independent industry analysis report choose DeviceNet over other networks.

ICP DAS has been developing CAN based DeviceNet protocol products for several years, include PCI interface card, gateway, DeviceNet IO and DeviceNet module for ICP DAS's PACs — XPAC/WinCon/LinCon/iPAC series main contol unit. We also help customers to resolve various DeviceNet network technology problems. In addition, we can provide DeviceNet solution for users. ICP DAS also holds DeviceNet conference, exhibition and training course all over the world.
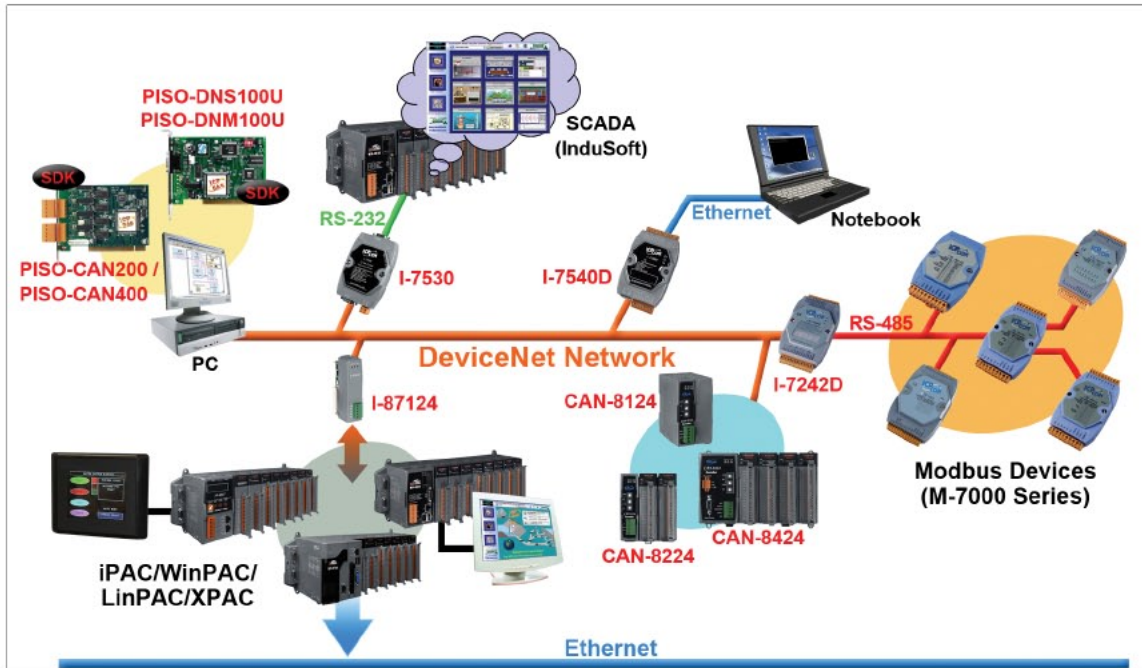

DeviceNet Series Key Features

- Comply with DeviceNet specification volume I, release 2.0 & volume II, release 2.0
- Support Predefined Master/Slave Connection Set (Group2 Only Server)
- I/O operating modes: Polling, Bit-Strobe, Change of State/ Cyclic
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in Jumper or DIP switch for 120 Ω terminator resistor of CAN bus
- Built-in watchdog

DeviceNet Series in ICP DAS

DeviceNet slave remote I/O unit series

CAN-8x24 series are specially designed for the slave device of DeviceNet protocol with 1/2/4 I/O slots. Variety I/O modules can be chosen to use. Also, these products support Hot-swap function for maintaining conveniently.
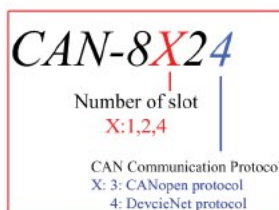
DeviceNet Gateway series

The Modbus TCP/RTU and DCON protocol gateways are ready for users. This series can be used to integrate different protocol system. Users also easily update their old system to the DeviceNet system with the series. They are I-7241D, I-7242D and I-7243D.

DeviceNet master series

Parts of DeviceNet master series are I-87124 for PACs and PISO-DNM100 for PC. In the parts, there is a DeviceNet master kernel inside. I-7565-DNM is also master product with USB interface. These products above are built-in 80 MHz 186 CPU. Therefore, they can be used in high performance system. For economical solution, we provide the PISO-CAN card with the DeviceNet master library.
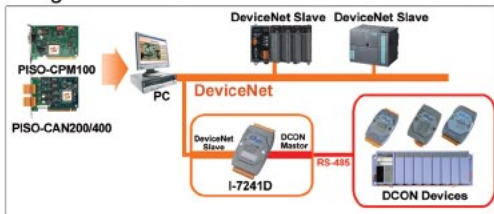
DeviceNet Slave / DCON Master Gateway

I-7241D

I-7241D is one of CAN bus products of ICP DAS. The device offers the communication gateway between DeviceNet and DCON protocol.

CE FC RoHS

* Comply with DeviceNet specification volume I, release 2.0 & volume II, release 2.0
* Support Predefined Master/Slave Connection Set (Group2 Only Server)
* I/O operating modes: Polling, Bit-Strobe, Change of State/Cyclic
* 2500 Vrms photo-couple isolation on the CAN side
* Built-in jumper for 120 Ω terminator resistor of CAN bus
* Built-in watchdog
* Provide dynamic Assembly Objects mapping
* Support Offline Connection Set, Device Heartbeat message and Device Shutdown message
* Product EDS file dynamically by utility
* Support max. 15 I-7000/I-87K I/O series modules
* MAC ID & baud rate: Setting by utility or DeviceNet messages
* 1 kV galvanic isolation


DeviceNet Slave / Modbus RTU Master Gateway

I-7242D

I-7242D allows a master located on a DeviceNet network to enter into a dialogue with the slaves on a Modbus RTU network In DeviceNet network, it is a Group 2 Only Slave device, and supports "Predefined Master/Slave Connection Set".

CE FC RoHS

* Comply with DeviceNet specification volume I, release 2.0 & volume II, release 2.0
* Support Predefined Master/Slave Connection Set (Group2 Only Server)
* I/O operating modes: Polling, Bit-Strobe, Change of State/Cyclic
* 2500 Vrms photo-couple isolation on the CAN side
* Built-in jumper for 120 Ω terminator resistor of CAN bus
* Built-in watchdog/Provide dynamic Assembly Objects mapping
* Support Offline Connection Set, Device Heartbeat message and Device Shutdown message
* Allow to configure Explicit Message by using Modbus RTU protocol
* Product EDS file dynamically by utility
* Support max. 10 Modbus RTU series modules
* 1 kV galvanic isolation
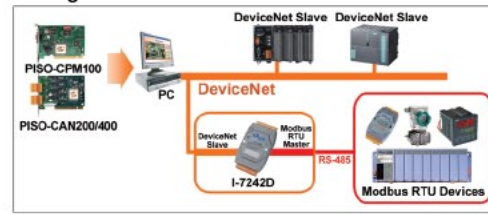
## DeviceNet Master / Modbus TCP Server Gateway

I-7243D

I-7243D from ICP DAS is a solution that provides a communication protocol transfer the DeviceNet and Modbus/TCP protocol and solves a mission-critical problem: connecting an existing DeviceNet network to Ethernet-base PLCs

CE FC RoHS

* Comply with DeviceNet specification volume I, release 2.0 & volume II, release 2.0
* Support Predefined Master/Slave Connection Set (Group2 Only Server)
* I/O operating modes: Polling, Bit-Strobe, Change of State/Cyclic
* 2500 Vrms photo-couple isolation on the CAN side
* Built-in jumper for 120 Ω terminator resistor of CAN bus
* Built-in watchdog
* The maximum input/output fragment number is up to 64
* Support on-line adding device into and removing device from network
* Support single Modbus TCP to multi Modbus RTU function
* Support VxComm technique for every COM ports of controllers
* Allow multi-client (or master) access simultaneously
* 1 kV galvanic isolation
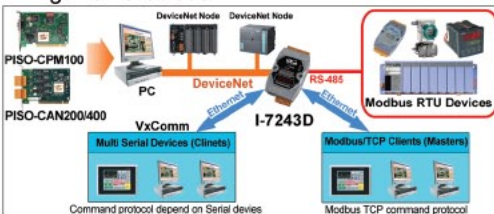
USB/DeviceNet Master Converter

I-7565-DNM

I-7565-DNM is a DeviceNet master solution for USB interface built-in 80M Hz 186CPU. It can easily control/configure DeviceNet slave nodes via PC.

FC CE RoHS

OS Support: Window 2K/XP/Vista

* Comply with DeviceNet specification volume I, release 2.0 & volume II, release 2.0
* Support Predefined Master/Slave Connection Set (Group2 Only Server)
* I/O operating modes: Polling, Bit-Strobe, Change of State/Cyclic
* 2500 Vrms photo-couple isolation on the CAN side
* Built-in jumper for 120 Ω terminator resistor of CAN bus
* Built-in watchdog
* Support UCMM function
* Provide on-line adding device into and removing device from network
* Support auto-scan slave device function
* Auto-reconnect when the connection is broken
* Provide C/C++ function libraries and demos
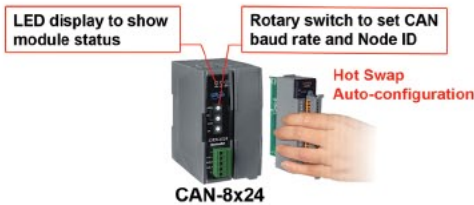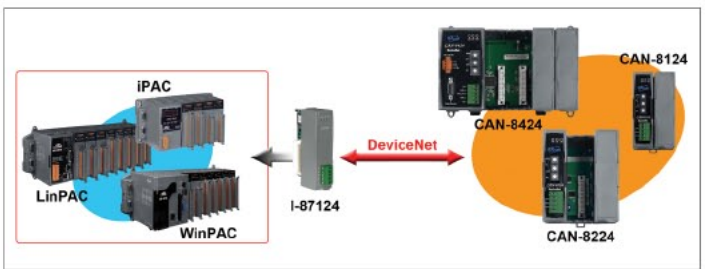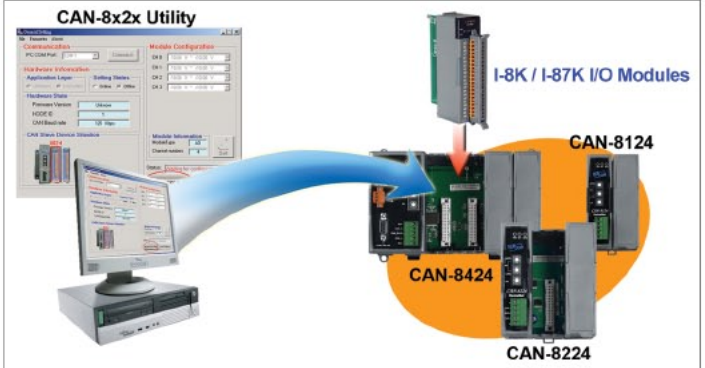* 3 kV galvanic isolation

DeviceNet Remote I/O Unit with 1/2/4 I/O Slots

CAN-8x24

CAN-8x24 main unit based on the modular design offers many good features to the users and provides more flexibility in data acquisition and control system. In addition, ICP DAS also presents a CAN-8x24 Utility tool to allow users to configure and create the EDS file for the specific IO modules plugged in. Therefore, users can easily apply the CAN-8424 embedded controller in DeviceNet network.

- Comply with DeviceNet specification volume I, release 2.0 & volume II, release 2.0
- Support Predefined Master/Slave Connection Set (Group2 Only Server)
- I/O operating modes: Polling, Bit-Strobe, Change of State/Cyclic
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- Provide dynamic Assembly Objects mapping
- Support Offline Connection Set, Device Heartbeat message and Device Shutdown message
- Support Fragmented Explicit message
- Product EDS file dynamically by utility
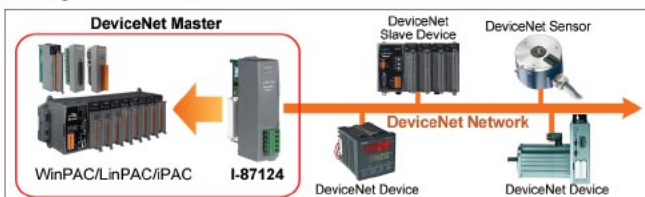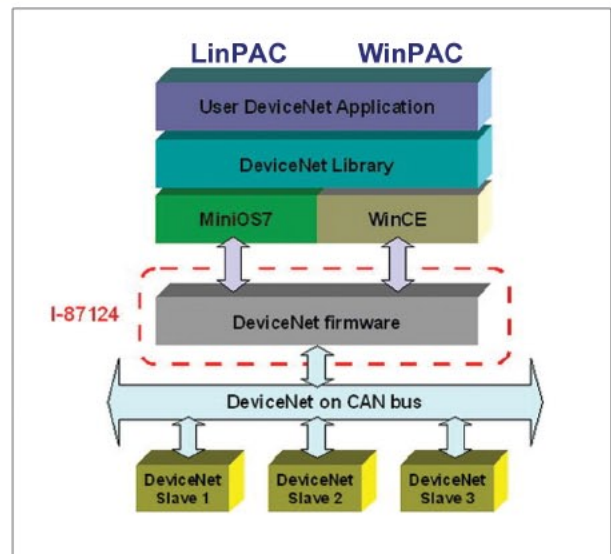- Provide 1/2/4 expansion slots for I-8000 or I-87K series modules
- 3 kV galvanic isolation

CAN-8x2x Utility

I-8K / I-87K I/O Modules

CAN-8124
CAN-8424
CAN-8224

LED display to show module status
Rotary switch to set CAN baud rate and Node ID
Hot Swap Auto-configuration
CAN-8x24

iPAC
LinPAC
WinPAC
I-87124
DeviceNet
CAN-8124
CAN-8424
CAN-8224

Standalone DeviceNet Master Expansion Modules

I-87124

I-87124 can represent an economic solution of DeviceNet application and be a DeviceNet master device in the CAN bus on the DeviceNet network. It uses "Predefined Master connection Set", and supports Group 2 only Server functions to communication with slave devices. It has a independent CAN bus communication port with 5-pin screw terminal connector, and has the ability to cover a wide range of DeviceNet applications. Besides, I-87124 uses the new CAN controller Phillips SJA1000T and transceiver 82C250, which provide bus arbitration, error detection with auto correction and re-transmission function. It can be installed in WinPAC/LinPAC/iPAC series PAC.

- Comply with DeviceNet specification volume I, release 2.0 & volume II, release 2.0
- Support Predefined Master/Slave Connection Set (Group2 Only Server)
- I/O operating modes: Polling, Bit-Strobe, Change of State/Cyclic
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in DIP switch for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- Support UCMM function
- Provide on-line adding device into and removing device from network
- Support auto-scan slave device function
- Auto-reconnect when the connection is broken
- Provide C/C++ function libraries and demos
- 3 kV galvanic isolation

LinPAC   WinPAC
User DeviceNet Application
DeviceNet Library
MiniOS7   WinCE
I-87124   DeviceNet firmware
DeviceNet on CAN bus
DeviceNet Slave 1   DeviceNet Slave 2   DeviceNet Slave 3

DeviceNet Master
DeviceNet Slave Device
DeviceNet Sensor
DeviceNet Network
WinPAC/LinPAC/iPAC   I-87124
DeviceNet Device   DeviceNet Device

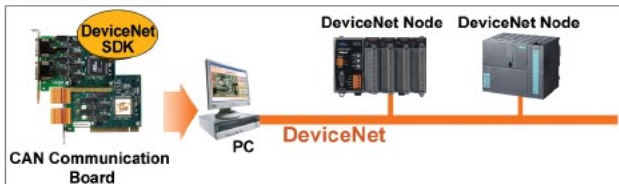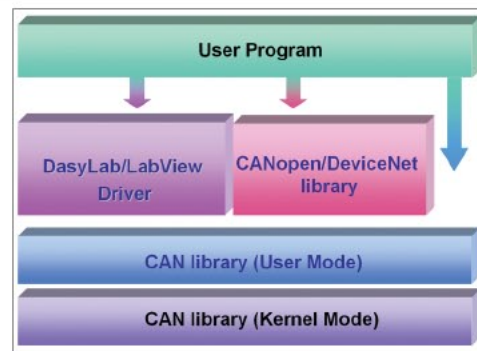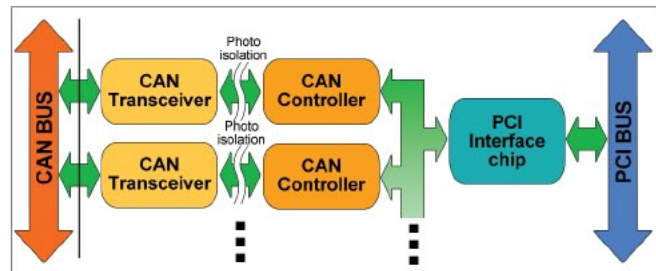## CAN Communication Board with DeviceNet Master Library

DeviceNet Master

DeviceNet is a low level network that provides connections between simple industrial devices (sensors, actuators) and higher level devices (controllers). It allows direct peer to peer data exchange between nodes in an organized and, if necessary, deterministic manner. We provides DevicdNet library for users to develop the specific DeviceNet applications by PISO-CAN200/400. In addition, we also provide the DeviceNet diagnosis application tool to monitor and diagnose the DeviceNet message through CAN network. It provides the DeviceNet communication protocol interface to control and analyze the DevicdNet slaves.

OS support : Windows 2K/XP/Vista

- Comply with DeviceNet specification volume I, release 2.0 & volume II, release 2.0
- Support Predefined Master/Slave Connection Set (Group2 Only Server)
- I/O operating modes: Polling, Bit-Strobe, Change of State/Cyclic
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Support on-line adding device into and removing device from network
- Support Fragmented Explicit message
- On-line change baud and MAC ID of CAN / Watchdog inside
- The maximum input/output fragment number is up to 64
- Provide VC++, VB, Borland C++ Builder function libraries and demos
- PISO-CAN 200/400/200U/400U/200E or PCM-CAN 200/ PCM-CAN200P

Standalone DeviceNet Master Communication Board

PISO-DNM100U

PISO-DNS100U has completed DeviceNet master function according to DeviceNet Group 2 only server. With the built-in 80186 80 MHz CPU, this card can be applied in high transmission DeviceNet applications.

OS support : Windwos 2K/XP/Vista

- Universal PCI card, supports both 5 V and 3.3 V PCI bus
- Comply with DeviceNet specification volume I, release 2.0 & volume II, release 2.0
- Support Predefined Master/Slave Connection Set (Group2 only server)
- I/O operating modes: Polling, Bit-Strobe, Change of State/Cyclic
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- Built-in watchdog
- Support UCMM function
- Provide on-line adding device into and removing device from network
- Support auto-scan slave device function
- Auto-reconnect when the connection is broken
- 3 kV galvanic isolation 80 MHz 186 CPU inside

Node No.	Items	DeviceNet Product	
		PISO-DNM100U	PISO-CAN-200/400
1 Nodes	PC CPU loading	1 %	9 %
2 Nodes	PC CPU loading	0 %	27 %
4 Nodes	PC CPU loading	0 %	68 %
8 Nodes	PC CPU loading	0 %	100 %

1-port Intelligent DeviceNet Multi-Slave Board

PISO-DNS100U

PISO-DNS100U has completed DeviceNet slave function according to DeviceNet Group 2 only server. With the built-in 80186 80 MHz CPU, this card can be applied in high transmission applications. The amazing function is that 10 slave nodes are implemented inside the PISO-DNS100U.

OS support : Windwos 2K/XP/Vista

- Universal PCI card, supports both 5 V and 3.3 V PCI bus
- DeviceNet Version: Volume I & II, Release 2.0
- Programmable Slave MAC ID and baud rate
- Baud rate: 125 k, 250 k, 500 kbps
- Support Group 2 only Server
- I/O Modes: Poll, Bit-Strobe, Change of State / Cyclic
- I/O Length: 512 bytes max. (Input/Output) per slave
- Slave Node : Max. 10 nodes inside the board
- Not Support UCMM
- LED : Status , ERR
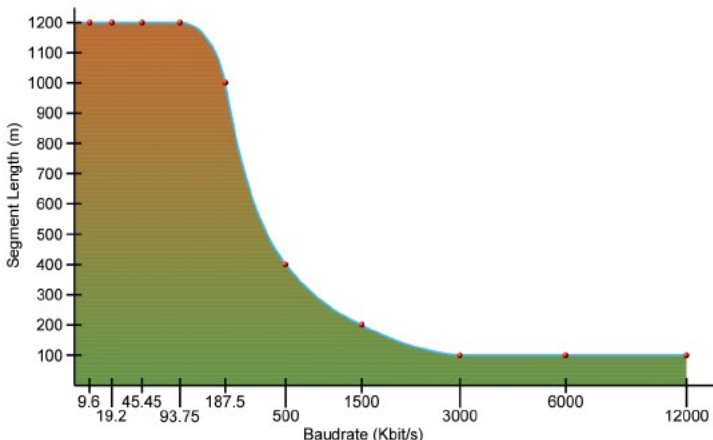

PROFIBUS Series

NETWORK APPLICATION
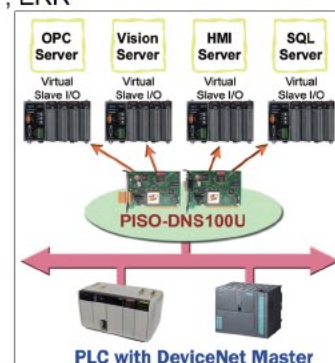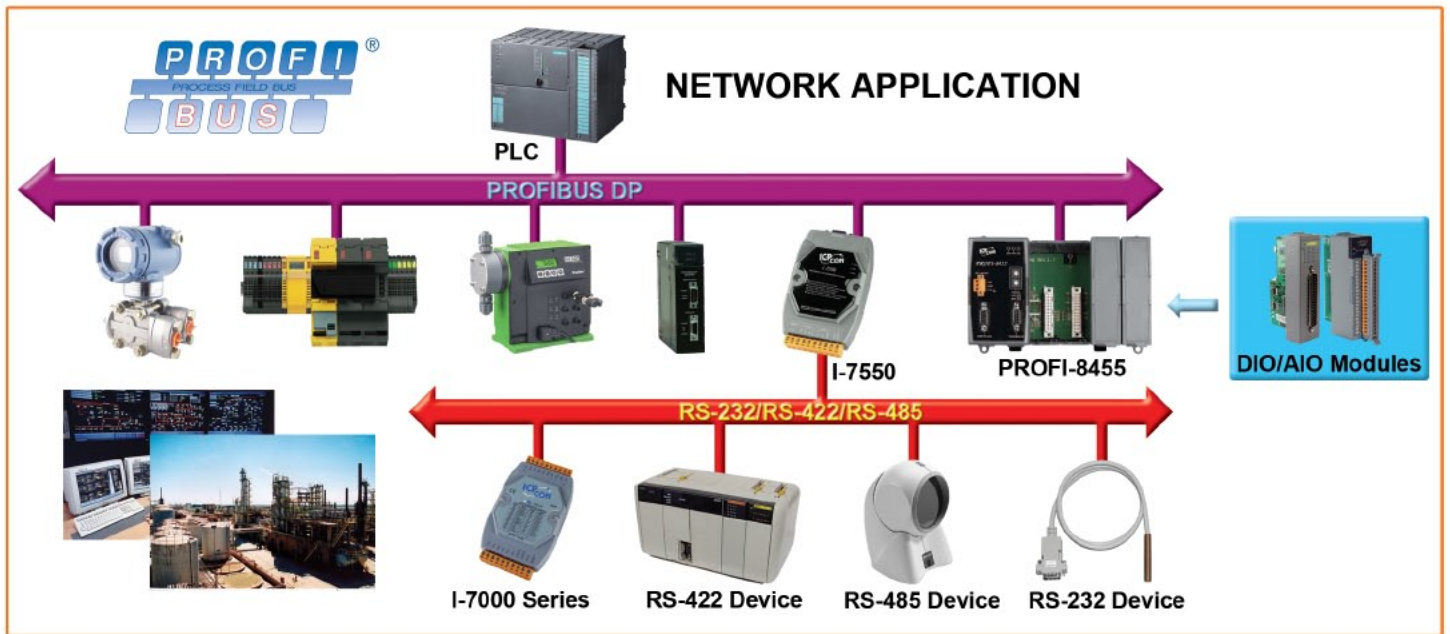
PROFIBUS Introduction

PROFIBUS (PROCESS FIELD BUS) which is anchored in the international standards IEC 61158 and IEC 61784 is an open, digital communication system with a wide range of applications, particularly in the fields of factory and process automation. It is suitable for both fast, time-critical applications and complex communication tasks.

In order to let user use this powerful communication system more easily, ICP DAS provides several kinds of PROFIBUS DP products. We have been developing and studying PROFIBUS DP for several years. ICP DAS will always secure user's industrial safety and stable automation system as our mission.

PROFIBUS Features

- Baud rate up to 12 Mbit/s
- Maximum 244 bytes input and 244 bytes output per slave
- Slave configuration and parameters are set from the master side by GSD file
- Allow multi-master system
- Fast cyclic data communication between master and slave
- 124 slaves can be put in data exchange
- 32 stations on one segment

PROFIBUS Series in ICP DAS

- High protection hardware design

  ICP DAS thinks that these products are used in the harsh environment. When we design the products, the isolation is designed in power-in side and communication side to prevent the external noise disturbance.

Block Diagram of PROFI-8455
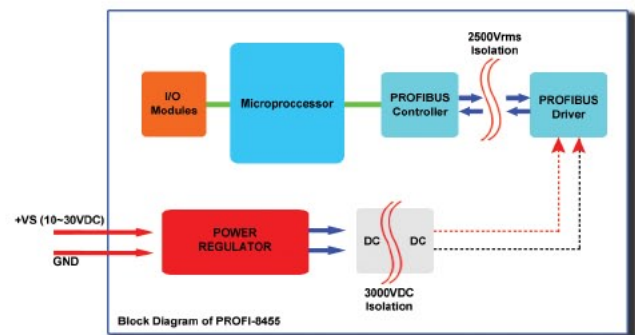
- Hot-Swap in PROFIBUS remote I/O units (PROFI-8x55)

  The Hot-Swap function of PROFI-8x55 is provided to maintain the system easily. Therefore, users can on-line diagnose the damaged I/O module and change the module.

Hot Swap, Auto Configuration
(I-87K high profile modules)

- Good in harsh environment

  PROFIBUS products in ICP DAS can be operated in wide temperature & humidity provided high reliability.

-25°C ~ 75°C

ICP DAS Co., Ltd.

## PROFIBUS to RS-232/422/485 Converter

I-7550

I-7550 converter is specially designed for the slave device of PROFIBUS DP protocol. It offers RS-232, RS-422, and RS-485 three kinds of communication ways. With the hybrid COM port design, users can readily choose one type of COM port to use. The I-7550 enables the integration of systems such as serial I/O devices, electronic scales, card readers, barcode readers and other automation devices which use the RS-232/RS-485/RS-422 interface into PROFIBUS DP applications.

- Protocol & Hierarchy: DP-V0 slave
- Detect transmission rate (9.6 k to 12 Mbps) automatically
- 128 bytes max. input data length
- 128 bytes max. output data length
- Address 0~126 set by DIP switch
- Support several kinds of baud for COM1 from 1.2 k to 115.2 kbps
- Network Isolation Protection: High Speed iCoupler
- 3000 Vdc isolation protection on PROFIBUS side
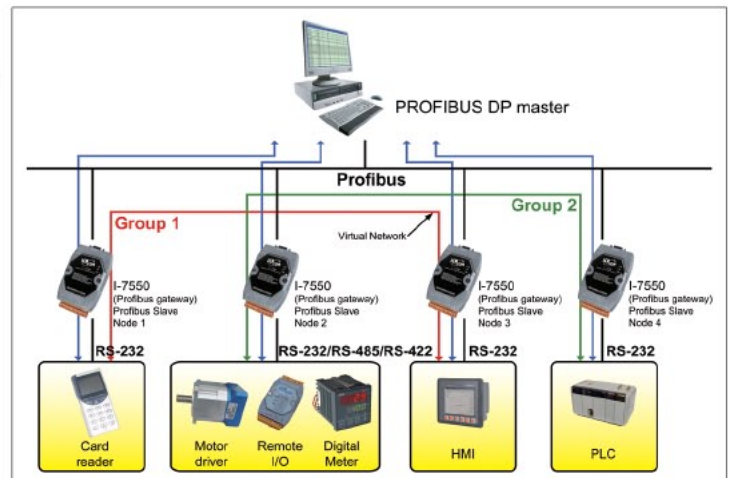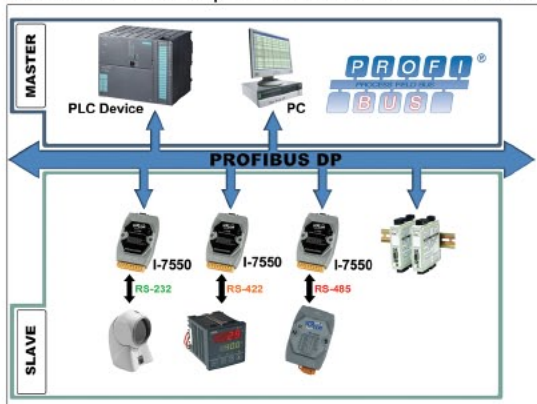
## PROFIBUS to Modbus RTU/ASCII Gateway

GW-7552

GW-7552 gateway is specially designed for the slave device of PROFIBUS DP protocol. It allows the PROFIBUS master to access the Modbus devices. These Modbus devices may be a PLC, a sensor, ICPDAS M-7000 series modules and so forth. In addition, we also provide the utility software for users to configure the GW-7552. By using this module, users can put their Modbus devices into PROFIBUS network very easily.

- Protocol & Hierarchy: DP-V0 slave
- Detect transmission rate (9.6 k to 12000 kbps) automatically
- 128 bytes max. input data length
- 130 bytes max. output data length
- Support both Modbus master and Modbus slave
- Support Modbus RTU and Modbus ASCII format
- Address 0~126 set by DIP switch
- Support several kinds of baud for COM1 from 2.4 k to 115.2 kbps
- Network Isolation Protection: High Speed iCoupler
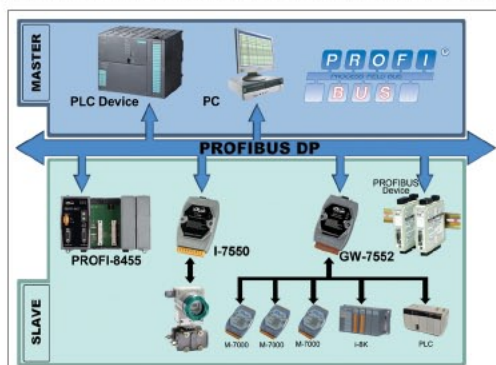
| Code	Name	Description
01	Read Coil Status	Read the ON/OFF status of discrete outputs in the slave
02	Read Input Status	Read the ON/OFF status of discrete inputs in the slave
03	Read Holding Registers	Read the binary contents of holding registers in the slave
04	Read Input Registers	Read the binary contents of input registers in the slave
05	Force Single Coil	Write a single output to either ON or OFF in the slave
06	Preset Single Register	Write an integer value into a single register in the slave
15	Force Multi. Coils	Write each coil in the sequence of coils to either ON or OFF in the slave
16	Preset Multi. Registers	Write a block of contiguous registers in the slave

PROFIBUS/Modbus TCP Gateway

GW-7553

GW-7553 is a PROFIBUS gateway to support PROFIBUS DP Slave and Modbus protocols. It allows the PROFIBUS Master to access the Modbus TCP server devices. These Modbus TCP devices can be a PLC, a sensor, ICPDAS PACs, I-8KE4-MTCP, ET-7000 series, and so forth. By using the GW-7553, users can put their Modbus TCP devices into PROFIBUS network easily. Expect Modbus TCP protocol, the GW-7553 also supports Modbus RTU and ASCII protocol.

- Protocol & Hierarchy: DP-V0 slave
- Detect transmission rate (9.6 k to 12 Mbps) on PROFIBUS automatically
- Support one 10/100 Base-TX Ethernet port
- Support one RS-232 port (3-wire or 5-wire)
- 128 bytes max. input data length
- 131 bytes max. output data length
- Support Modbus TCP/RTU/ASCII master/slave protocol
- PROFIBUS address 0 ~ 126 set by DIP switch
- Network Isolation Protection: 2500 Vrms High Speed iCoupler
- 3000 Vdc isolation protection on PROFIBUS side
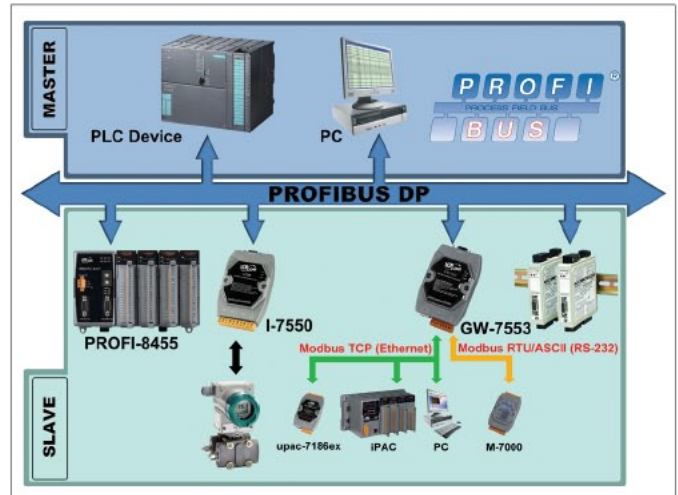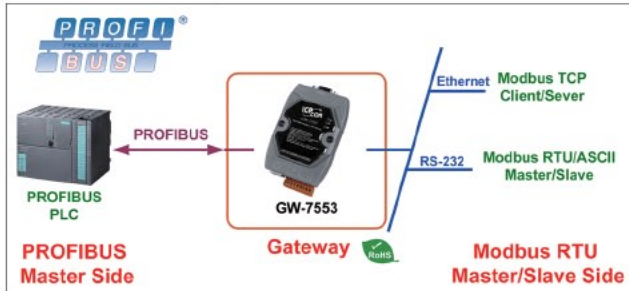
PROFIBUS Remote I/O Unit with 1/2/4 Expansion Slots

PROFI-8155
PROFI-8255
PROFI-8455

PROFI-8x55 remote I/O units are specially designed for the slave device of PROFIBUS DP protocol. They support up to 1/2/4 slots for ICP DAS I-8k series, I-87k low profile series, and I-87k high profiles series I/O modules. In addition, we also provide hot-swap function for I-87k high profiles series I/O modules. To setup network, users can choose and configure I/O modules by using the GSD file without any other setting tools.

- Protocol & Hierarchy: DP-V0 slave
- Detect transmission rate (9.6 k to 12 Mbps) automatically
- 128 bytes max. input data length
- 128 bytes max. output data length
- Address 0~126 set by DIP switch
- Network Isolation Protection: High Speed iCoupler
- 3000 Vdc isolation protection on PROFIBUS side
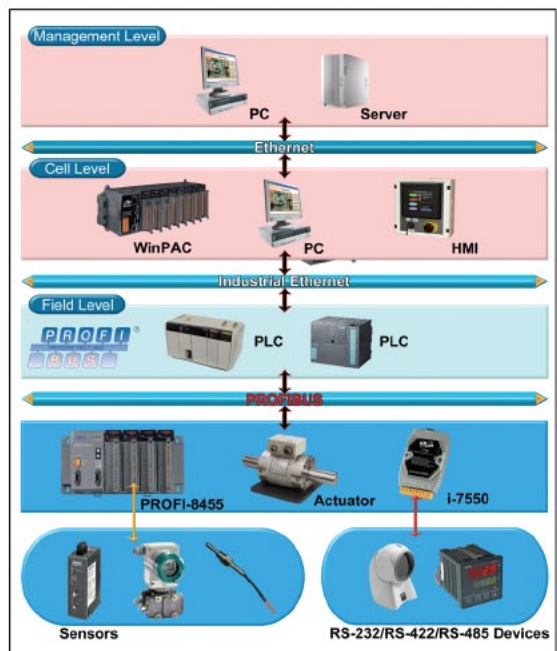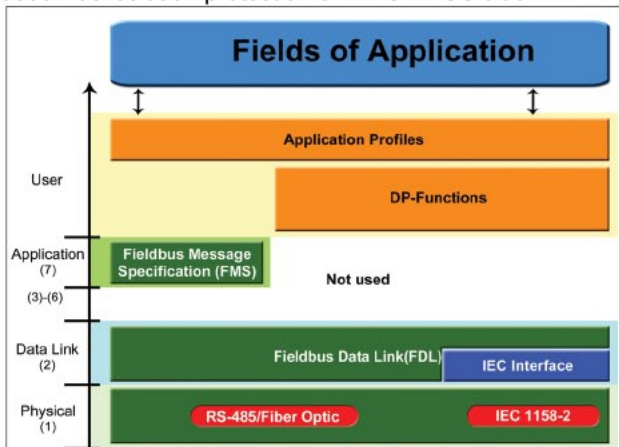
CAN Bus Series Selection Guide

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I-2533	CAN bus to Fiber Bridge with ST fiber connector and screwed terminal connector on CAN si de	8
I-7531	CAN bus isolated Repeater with screwed terminal connector	7
I-7532	2-port CAN bus bridge with screwed terminal connector	7
I-7530	1-port CAN bus to RS-232 Converter with 9-pin D-Sub connector	7
I-7530A	1-port CAN bus to RS-232/RS485/RS422 Converter with screwed terminal connector	7
I-7540D	Ethernet to CAN/RS-232/RS-485 ports Converter with screwed terminal connector	8
I-7565	USB to 1-port CAN bus Converter with 9-pin D-Sub connector	9
I-7565-H1	High speed USB to 1-port CAN bus Converter with 9-pin D-Sub connector	9
I-7565-H2	High speed USB to 2-port CAN bus Converter with screwed terminal connector	9
Intelligent CAN bus modules		10
I-7188XBD-CAN	CAN bus programmable automation controller with 1-port RS-232, 1-port RS-485, 1-ch DI and 1-ch DO	10
uPAC-7186EXD-CAN	CAN bus programmable automation controller with 1-port Ethernet, 1-port RS-232 and 1-port RS-485	10
I-8120W	Intelligent 1-port CAN bus Communication module with parallel bus for WinPAC/LinPAC	10
I-87120	Intelligent 1-port CAN bus Communication module with serial bus for WinPAC/LinPAC/iPAC	10
CAN bus Communication boards		11
PISO-CAN200/400-D/T	2/4-Port CAN bus PCI interface Board with 9-pin D-Sub or 5-pin screwed terminal connector	11
PISO-CAN200/400U-D/T	2/4-Port CAN bus Universal PCI interface Board with 9-pin D-Sub or 5-pin screwed terminal connector	11
PISO-CAN200E-D/T	2-port CAN bus PCI Express x1 interface Board with 9-pin D-Sub or 5-pin screwed terminal connector	11
PISO-CM100-D/T	Intelligent 1-port CAN bus PCI interface Board with 9-pin D-Sub or 5-pin screwed terminal connector	12
PISO-CM100U-D/T	Intelligent 1-port CAN bus universal PCI interface Board with 9-pin D-Sub or 5-pin screwed terminal connector	12
PCM-CAN200	2-port CAN bus PCI-104 interface Board with 9-pin D-Sub connector	12
PCM-CAN200P	2-port CAN bus PC-104+ CAN Module with 9-pin D-Sub connector	12

Selection Guide

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I-7232D	CANopen Slave / Modbus RTU Master Gateway with screwed terminal connector	14
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PISO-CAN200/400	2/4 Port CAN bus series communication boards with CANopen master Library	16
PISO-CPM100U-D/T	Intelligent 1-port CANopen Master universal PCI interface Board with 9-pin D-Sub or 5-pin screwed terminal connector	16
PISO-CPS100U-D/T	Intelligent 1-port CANopen Slave universal PCI interface Board with 9-pin D-Sub or screwed terminal connector	16
CANopen Remote I/O units		15
CAN-8123	CANopen remote I/O unit with 1 I/O slot	15
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PROFI-8155	PROFIBUS remote I/O unit with 1 I/O slot	23
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PROFI-8455	PROFIBUS remote I/O unit with 4 I/O slots	23

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Intelligent DeviceNet Gateways		18
I-7241D	DeviceNet Slave / DCON Master Gateway with screwed terminal connector	18
I-7242D	DeviceNet Slave / Modbus RTU Master Gateway with screwed terminal connector	18
I-7243D	DeviceNet Master / Modbus TCP Server Gateway with screwed terminal connector	18
Intelligent DeviceNet communication module		19
I-87124	Intelligent 1-port DeviceNet master communication module with serial bus	19
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PISO-CAN200/400	2/4 Port CAN bus series communication boards with DeviceNet master Library	20
PISO-DNM100U-D/T	Intelligent 1-port DeviceNet Master universal PCI interface Board with 9-pin D-Sub or 5-pin screwed terminal connector	20
PISO-DNS100U-D/T	Intelligent 1-port DeviceNet Slave universal PCI interface Board with 9-pin D-Sub or 5-pin screwed terminal connector	20
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Accessory Item

Model	Description
ADP-9-D	2-port CAN expansion daughter board with 9-pin D-Sub connectors
ADP-9-T	2-port CAN expansion daughter board with screwed terminal connectors
PWR-24/110	Wall-plug power adapter/110 VAC, 60 Hz, 3.6 W
PWR-24/220	Wall-plug power adapter/220 VAC, 50 Hz, 3.6 W

BP-3450	External Battery Pack

● Power on LED & Battery Capacity Indicator
● Multi-Protection: Over Charge, Over Discharge, Over Current, Over Temperature, Short Circuit Protection.

Specifications

Battery Type: Li-Polymer
Output Voltage : DC 12 V
Input : 19 V/3.16 A AC adapter
Weight: 450 g

Battery Capacity:3450 mAh
Output Current: Max 3.5 A
Charge Time : Within 4 hours
Dimensions: 174 x 84 x 23 mm