Industrial

Total Solutions

Fieldbus

2011 Brochure   Vol.IFTB1105

- **CAN bus**
- **CANopen**
- **DeviceNet**
- **J1939**
- **PROFIBUS**
- **HART**
- **EtherNet/IP**
- **BACnet**

ICP DAS Co.,Ltd.

http://www.icpdas.com

Professional Provider of High Quality Industrial Data Acquisition and Control Products

About Company

ICP DAS, established in 1993, focuses on innovation and improving the industrial automation technology. It strives for advanced remote I/O controllers, distributed I/O modules, and I/O data acquisition boards. To provide a total industrial automation solution and a complete after service, recently, ICP DAS enthusiastically endeavors to develop a series of programmable automation controller, webrelated products and motion-control systems.

ICP DAS offers an efficient and comprehensive automation solution for the application of industrial control, real-time data, warning system of earthquakes and hydrology, the power-monitoring, and video game consoles. ICP DAS has successfully gained worldwide recognition in the field of industrial control and automation. In factory automation part, the head of semiconductor, the LCD panel, and the petrol-chemical industries adopt our products to monitor equipments. In the intelligent building part, the highest skyscraper in the world-Taipei 101 uses our products to enhance its fire safety system. In traffic management segment, Taiwan Fisheries Administration takes our products as travel-recording devices. More applications such as on-line pollution-monitoring systems for JianGsu province and ZheJiang province in China, battery recharging systems for LG in Korea, the piers monitoring of Megami Bridge in Japan, the monitoring whole factory system in a well-known automobiles and jets companies and etc. ICP DAS is proud to provide versatile application solutions all over the world.

To maintain the position of technology-leading platform provider, ICP DAS invests heavily in R&D and has excellent R&D team. Over 110 software and hardware engineers provide the best solutions and innovative products to upgrade the development of the automation industry. Moreover, we offer a comprehensive set of service in U.S., Europe, China and etc. ICP DAS always maintains our high-quality and reliable products to get worldwide clients' affirmation and support.

Vertical Market Focus

Energy Monitoring
Environmental Monitoring System
Intelligent Transportation System
Factory Automation
Chemical Engineering
Machine Automation
Security Monitoring System
Telecommunication
The Intelligent Building
Human Entertainment Automation

Global Support
Manufacturing & Quality
Technical Support
RMA Service
OEM&ODM project

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1. Overview

Fieldbus Solutions

Fieldbus is known as a family of industrial network protocol for real-time distributed control. An automated industrial system usually needs Fieldbus solutions to overcome the connection problems among all of the components such as controllers, sensors, and actuators. 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.

In order to provide various solutions of Fieldbus, ICP DAS has devoted a lot of resource for many years to develop the Fieldbus products with different protocols. Beside the Modbus TCP, Modbus RTU and Modbus ASCII, these products comprehensively cover majority of industrial communication protocols for process and factory automations. They are shown below.
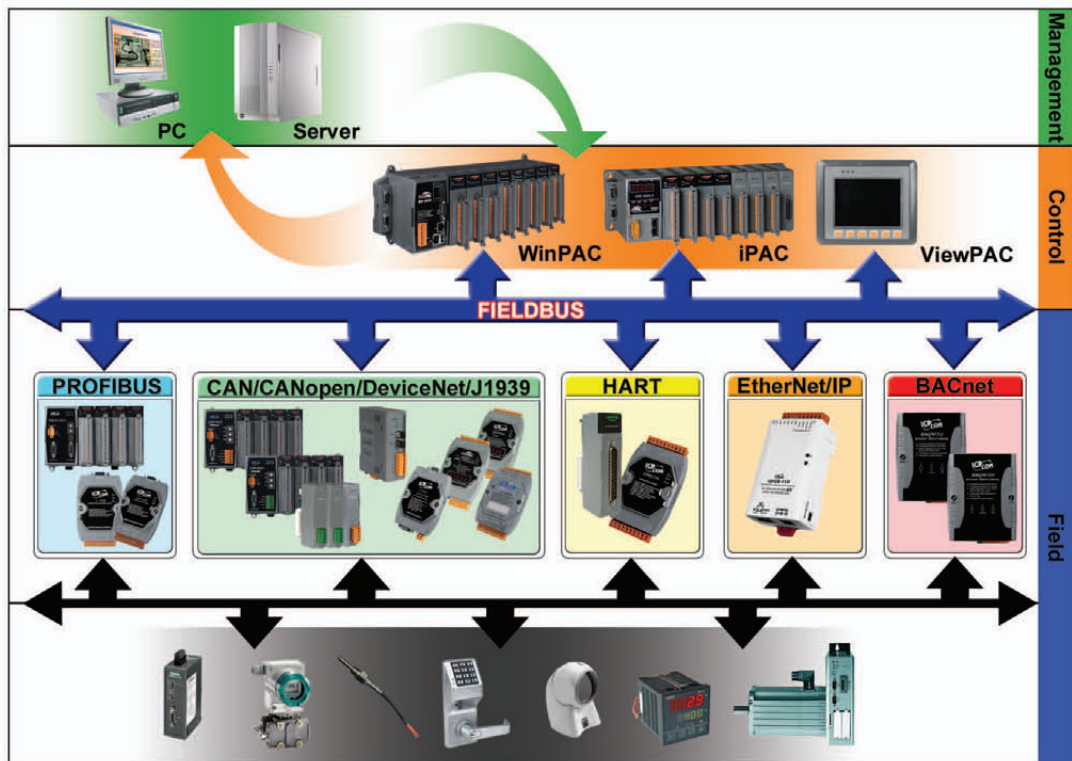
Moreover, we also provide the great diversity of PACs with different size and features. These powerful PACs give a way to assemble private protocols based on RS-232, RS-485, industrial Ethernet, CAN bus, Wi-Fi, 2.5G and 3G interfaces. Through them, it is possible to integrate various communication protocols in one controller, and to construct an multi-function automation system becomes more easily and quickly.

Overview

The Best Choice

▶ Solutions for various Fieldbus applications:

ICP DAS provides a lot of converters, gateway, PC-based, and PAC solutions for rich communication protocols. You can get the proper solutions depending on the application field. In any case, we completely offer the total solutions for various systems.
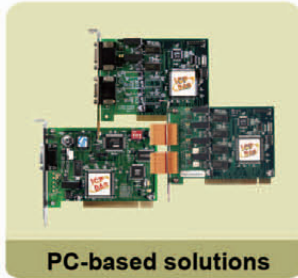
PC-based solutions

PAC solutions

Converter solutions

Gateway solutions

Remote I/O solutions

SBC solutions

▶ Friendly software and tools

ICP DAS has developed various friendly and convenient library and development tools in VB, VC, BCB and Delphi, VB.Net, C#.Net for users to develop their applications by these Fieldbus products. For SCADA software, we also provide InduSoft, LabVIEW, DASYLab drivers. In real time application, the RTX driver is useful. These rich tools help you to establish or debug the system more efficiently.

Overview

◉ High protection hardware design

In order to against the harsh environment, many protections are built-in the hardware such as galvanic isolation, photo isolation, power reverse polarity protection, over-voltage brown-out protection, EMI, ESD, EFT, surge, and so forth. Meanwhile, all products of ICPDAS pass CE and FCC.
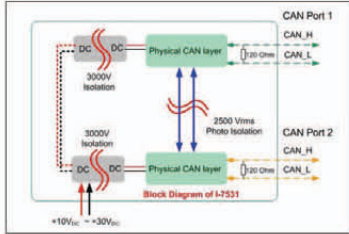
◉ DIN-Rail Mounting

◉ ODM and Technology Service

ICP DAS has focused on Fieldbus products for several years and has been accumulating the rich development experience on Fieldbus applications. We also have announced various Fieldbus projects for different applications. For the software and hardware, we always provide the best to our customers.

ICP DAS
WIN-WIN

ODM & Best Service

◉ Good in Harsh Environment

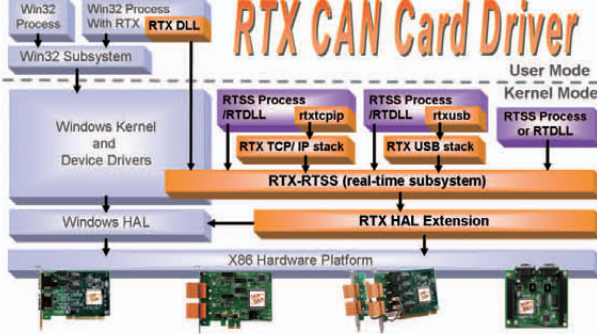Products by ICP DAS can be operated in a wide range of temperature & humidity, which provides high reliability.

-25°C ~ 75°C

◉ RoHS and WEEE Directive

ICP DAS supports 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 who place their electrical and electronic equipment onto the market without EU. ICP DAS identifies lead-free RoHS compliant products by using a unique part number and by adding a CR to the product name.

RoHS

CAN Bus Total Solutions

Factory Automation **Car Industry** **Marine Control**

CAN

CAN Bus Applications

Medical System **Photo-copiers** **Aircraft Control**
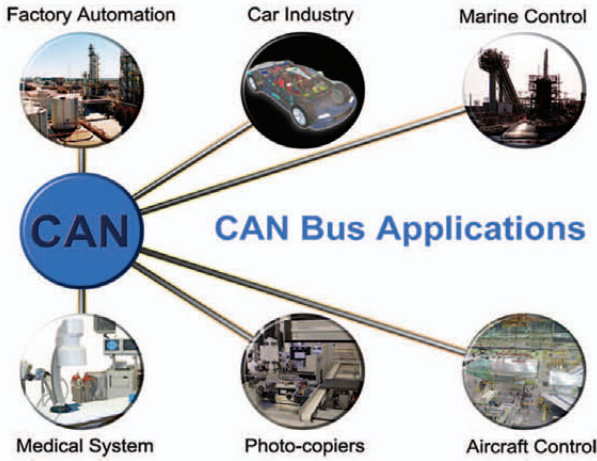
ICP DAS has been developing rich CAN-based / DeviceNet / CANopen / J1939 products for several years, include PCI interface card, field bus converter, PAC, gateway, and remote I/O module. We provide complete hardware solutions to satisfy various CAN-based applications. It can effectively solve the problems in data acquisition and calculation, working distance extension, network topology limitation, communication interface transformation, and noise resistance. Moreover, a lot of software resource, such as utility tools, APIs, demo programs, OPC, ActiveX and third-party drivers, help users build their complex control and monitor system more easily and quickly. In some special applications, we also offer flexible OEM / ODM projects to match the customers' different requirements. Through fast and good services, you can finish your tough CAN-based projects easily.

Overview

PC/Server

PC Based CAN Boards

Software / Utility / SCADA

Management

PAC Series

I-8000 & I-87K CAN Modules

Control

CAN Bus

Field

Centralized Remote I/O Modules

Distributed Remote I/O Modules

Gateways & Converters

Repeaters & Bridges & Switches

Devices

Overview
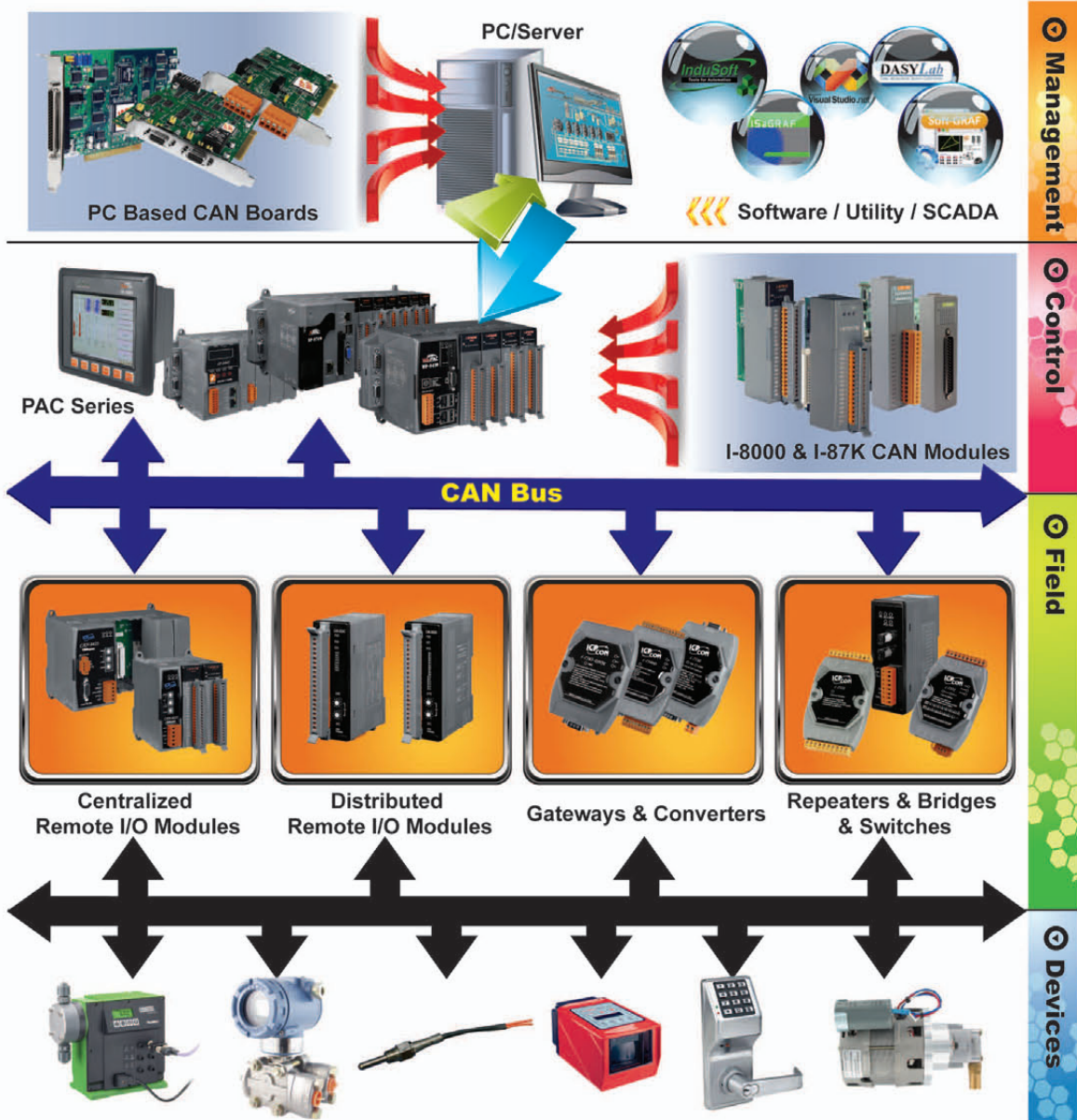
CAN Bus

The Controller Area Network (CAN) is a serial communication interface. It provides several mechanisms, such as error process mechanism, message priority, CRC check, etc., to guarantee the stability, reliability and transmission efficiency. Because of these features, you can see a lot of devices used in industrial control, automation applications, marine electronic devices, factory automation, and machine automation. No matter what kinds of applications and requirements you need, ICP DAS can provide the integral and complete CAN bus solutions to solve your problems.

CANopen

CANopen is a kind of CAN-based application layer protocols. It was developed as a standardized embedded network with highly flexible configuration capabilities. It is widely used all over the world, and has successfully applied in many fields, such as medical equipment, machine automation, off-road vehicles, public transportation, motion control, etc. In these applications, we provide the CANopen remote I/O modules, various CANopen master interfaces, and the communication gateways between the CANopen protocol and another fieldbus protocol.
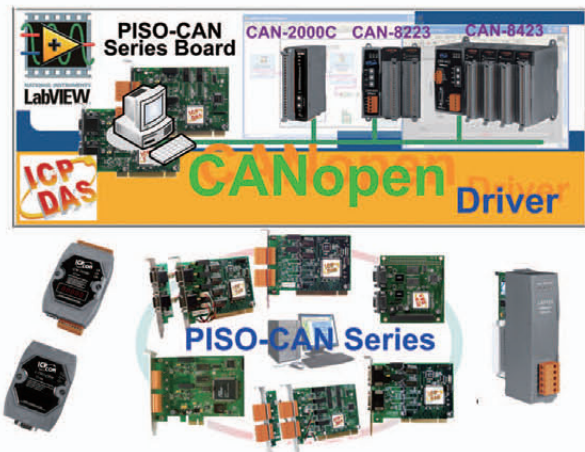
DeviceNet

The DeviceNet network is a flexible open and low-cost option which you can use to connect industrial devices to a network and eliminate costly and time-consuming hardwiring. Direct connectivity improves communication and provides device-level diagnostics or easy access though hardware I/O interfaces. ICP DAS has supplied a lot of remote I/O modules, master interfaces, gateways and software utility tools in this field. These products are usually applied in semi-conductor automation, machine automation, and factory automation.

J1939

Originally, the J1939-based protocol, a kind of CAN-based application layer protocols, is the vehicle bus standard used for communication and diagnostics among vehicle components. Afterwards, it has gradually become the accepted industry standard and the vehicle network technology of choice for off-highway machines in applications such as construction, material handling, and forestry machines. The J1939 Modbus gateway from ICP DAS can economically help you to obtain the J1939 data on the SCADA software. More J1939 related products are coming soon.
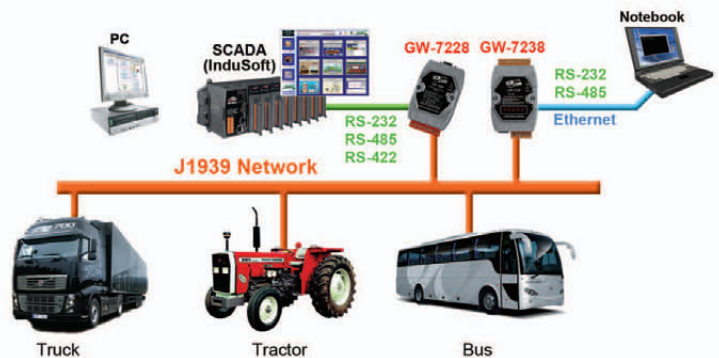
Application Stories
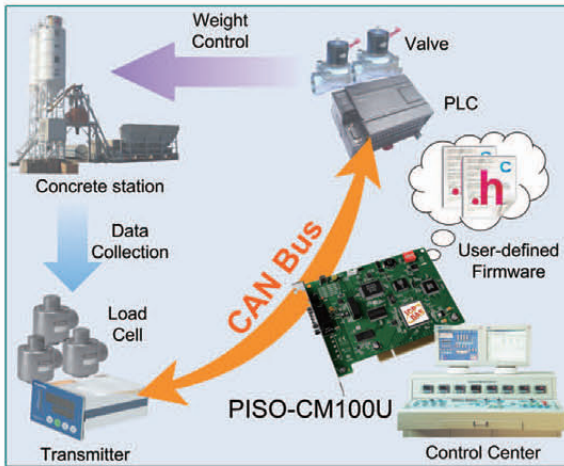
Concrete Station Monitor & Control System

- **Location**: Hunan, China
- **Product**: PISO-CM100U
- **Description**: The result of the quantity control of each recipe material seriously affects the quality of the concrete. In order to adjust each quantities promptly, CAN bus is applied. In this system, the PISO-CM100U is used to monitor the weight of each material from the load cells, and sends the recipe to the PLC. Meanwhile, the PC updates all the data to the screen. By using the user-defined firmware in the CPU of the PISO-CM100U, the PC loading can be effectively reduced, and the system becomes more smooth and reliable.

Cash-in-transit Vehicle

- **Location**: England, United Kingdom
- **Product**: I-7530-FT
- **Description**: A telematics and vehicle control system need to be closely integrated with each other by some data-exchange interfaces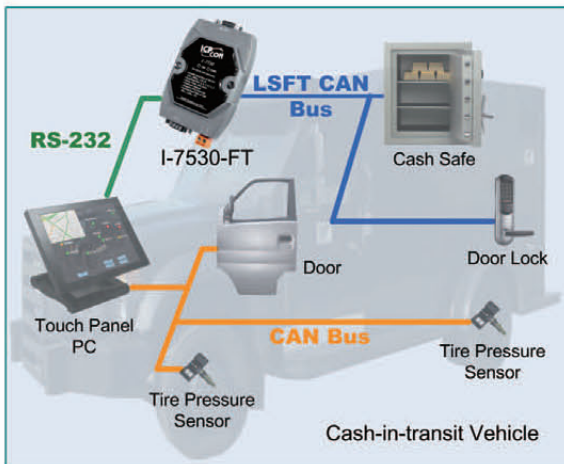. LSFT (Low speed fault tolerance) CAN is a kind of familiar interfaces in the autotronics applications. An I-7530-FT is specially designed for solving the interface transformation between LSFT CAN and RS-232. Through it, the cash-in-transit of the manufacturer can control the door of the cash safely and monitor the conditions of the back door directly and reliably on the telematics.
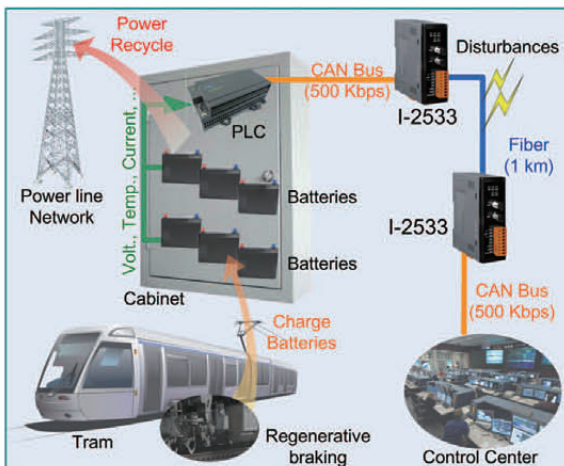
Tram Energy Recycle System

- **Location**: Hyogo, Japan
- **Product**: I-2533
- **Description**: Energy saving and carbon reduction has become what every country has to strive for. Therefore, the customer applies the regenerative braking to recycle the kinetic energy of the tram while it is braking. In order to resistant environment disturbances, extend CAN bus working distance and provide the higher CAN transmission speed, a couple of I-2533s are used. By means of them, the transmission distance of CAN bus is extended via 1 km fiber optics while using 500 kbps CAN baud rate.
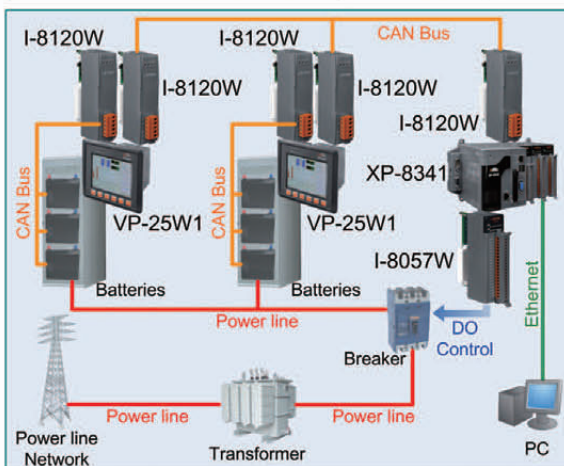
Energy Storage System

- **Location**: Guangdong, China
- **Product**: I-8120W, I-8057W, VP-25W1, XP-8341
- **Description**: This system can improve the usage efficiency of the electrical power. During the off-peak time of the electricity use, the unused electricity can be stored in the battery. When the peak time is coming, these batteries supply the power to the electric grid. The customer utilizes one of the I-8120Ws in VP-25W1 to monitor the battery status, and another is used to feedback these data to the XP-8341. The XP-8341 transmits the status to the PC via Ethernet and control the charge time by the breaker.

Overview

Corrugated carton cutting machine
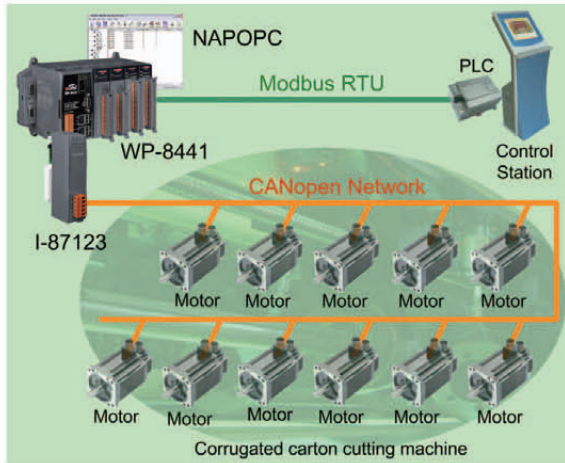
Corrugated Carton Cutting Machine

- **Location**: Taichung, Taiwan
- **Product**: WP-8441, I-87123
- **Description**: In this case, the orientation and cutting speeds seriously affect the quantity of output. Because all of the cutting knives and rollers must be controlled by 31 motors, the customer selects the CANopen motors to do that. The WP-8441 and I-87123 play the role of a CANopen master to control all of the motors simultaneously by the CANopen features of the synchronization and high speed. By using this architecture, all of the motors can quickly move to the target position at the same time by just sending one command.
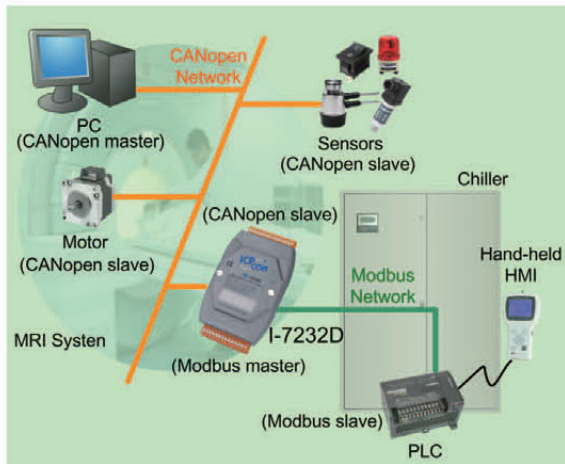

MRI Cooling System

- **Location**: Guangdong, China
- **Product**: I-7232D
- **Description**: In order to reduce the cost, a MRI manufacturer use the chiller made in China instead of German product. However, the customer gets into trouble with the different communication interface. By using the I-7232D, this problem is solved. I-7232D can be the Modbus RTU master while talking with the chiller. In the CANopen network, I-7232D is a CANopen slave. Therefore, I-7232D can easy bypass the information of the chiller to the CANopen master, and transfer the CANopen commands to the chiller.
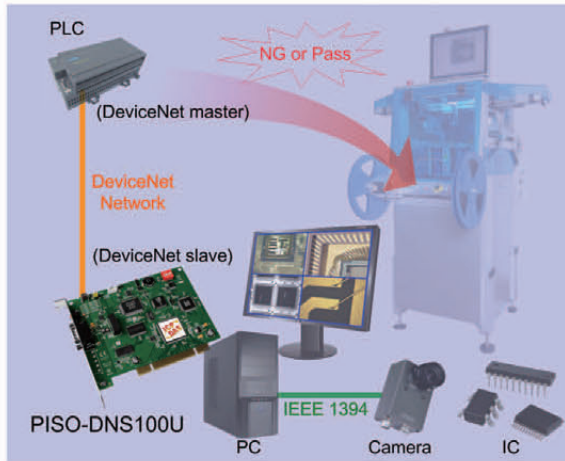
IC Inspection Machine

- **Location**: Hsinchu, Taiwan
- **Product**: PISO-DNS100U
- **Description**: The IC inspection process is necessary for a good quality control. Though the PLC is cheap and stable, the IC inspection is a tough work for a PLC. The customer uses PC+ camera + PISO-DNS100U to do the IC inspection, and uses PLC to control the mechanism for rejecting the defective ICs. After finishing the inspection, the PC writes the result to the PISO-DNS100U. Because the PLC is a DeviceNet master, it can easily get the information from the PISO-DNS100U via DeviceNet network.
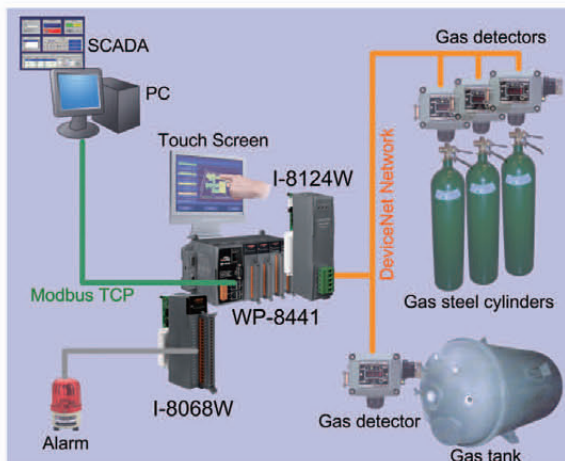
Semiconductor Gas Detection System

- **Location**: Kaohsiung, Taiwan
- **Product**: WP-8441, I-8124W
- **Description**: In semiconductor factory, a lot of poison and inflammable gas are widely used in various processes. In order to keep the employees safe, the gas detectors are general applied to detect the concentration of the poison and inflammable gas in the semiconductor. The customer uses WP-8441+I-8124W to be the DeviceNet master for obtaining the concentration information from the gas detectors. Besides, the present employees can immediately understand the air quality via the touch screen of the WP-8441.

2. CAN bus Introduction & Products

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 error processing mechanisms and message priority concepts. The features can improve the network reliability and transmission efficiency. Furthermore, CAN bus 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.

✳ 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
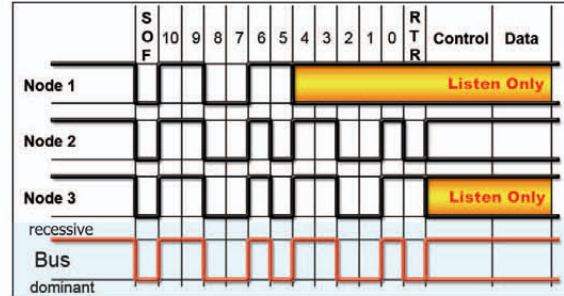
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I-7530A	CAN bus to RS-232/RS-485/RS-422 Converter	
I-7530-FT	Low Speed Fault Tolerance CAN bus to RS-232 Converter	
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CAN bus Introduction & Products

CAN bus Converter&Repeater

ICP DAS provides all 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.
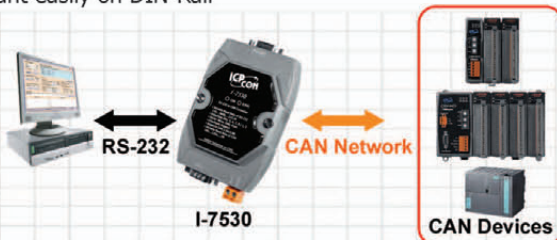
CAN bus to RS-232 Converter

I-7530 CR

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

✔ 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 ~ 1 Mbps
✔ 2500 V_{rms} photo couple isolation on the CAN side
✔ Jumper for 120 Ω terminator resistor of CAN bus
✔ Watchdog inside
✔ 3 kV galvanic isolation
✔ One CAN port and one RS-232 port
✔ Configure CAN and RS-232 parameters by utility
✔ Support transparent communication mode
✔ Mount easily on DIN-Rail

CAN bus to Modbus RTU Converter

I-7530A-MR CR
NEW

I-7530A-MR is a kind of CAN bus to Modbus RTU converter. Similar with I-7530A, it provides a way to connect CAN networks with programmable RS-232/485/422 devices. Specially, the I-7530A-MR provides Modbus protocol. This helps PLCs, HMIs, and SCADAs accessing CAN networks more easily and conveniently.

✔ Fully compatible with the ISO 11898-2 standard
✔ Programmable CAN bus baud rate from 10 kbps ~ 1 Mbps or user-defined baud rate
✔ Support CAN bus acceptance filter configuration
✔ Provide utility tool for users module setting and CAN bus communication testing conveniently
✔ Convert CAN message to specific ASCII command string
✔ Provide pair-connection communication between the RS-232/485/422 devices via CAN bus
✔ Support function code 0x03/0x04/0x10 of Modbus RTU functions for reading/writing CAN message

CAN bus to RS-232/485/422 Converter

I-7530A CR

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.

✔ 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 ~ 1 Mbps
✔ 2500 V_{rms} photo couple isolation on the CAN side
✔ Jumper for 120 Ω terminator resistor of CAN bus
✔ Watchdog inside
✔ 3 kV galvanic isolation
✔ One CAN, RS-232, RS-422, and RS-485 channel
✔ Configure CAN and serial COM parameters by utility
✔ Support transparent communication mode
✔ Mount easily on DIN-Rail
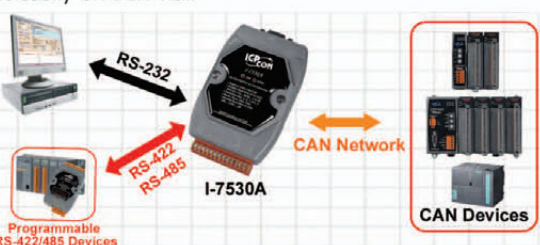
Low Speed Fault Tolerance CAN bus to RS-232 Converter

I-7530-FT CR

I-7530-FT is a CAN/RS-232 low speed fault tolerant converter. It can resist more noise in harsh environment, and even access CAN messages with single line of CAN bus. It can be used in the application of CAN bus monitoring, building automation, remote data acquisition, laboratory equipment & research, factory automation, etc.

✔ Microprocessor inside with 20 MHz
✔ Built-in CAN/RS-232 converter firmware
✔ Fully compatible with ISO 11898-3 standard
✔ Max transmission speed up to 125 kbps for CAN and 115.2 kbps for RS-232
✔ Support both CAN 2.0A and CAN 2.0B
✔ Build-in RS-232/CAN FIFO buffers
✔ Power, data flow and error indicator for CAN and RS-232
✔ Hardware watchdog design

CAN bus Introduction & Products
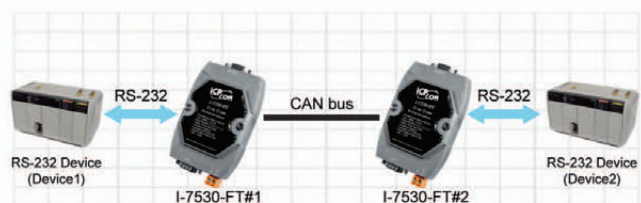
CAN bus Isolated Repeater

I-7531 CR

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.

- Compatible with CAN specification 2.0 parts A and B
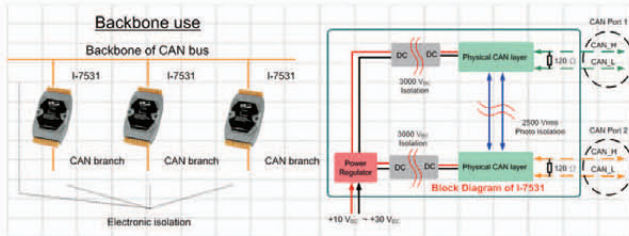- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps ~ 800 kbps
- 2500 V_{rms} photo couple isolation on the CAN side
- Jumper for 120 Ω terminator resistor of CAN bus
- Watchdog inside
- 3 kV galvanic isolation among the power supply and two CAN channels
- Auto-baud detection
- Up to 100 nodes on each CAN port
- Removable terminal block
- Mount easily on DIN-Rail

CAN bus Bridge

I-7532 CR

I-7532 is a CAN brdige used to extend CAN communication distance, enhance bus load capacity, integrate different baud rate and isolate the electronic disturbances between both CAN sides. It also provides ID filter function which can minimize CAN bus loading.

- 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 ~ 1 Mbps
- 2500 V_{rms} photo couple isolation on the CAN side
- Jumper for 120 Ω terminator resistor of CAN bus
- Extend the CAN working distance
- 3 kV galvanic isolation between two CAN channels
- Two CAN channels
- 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
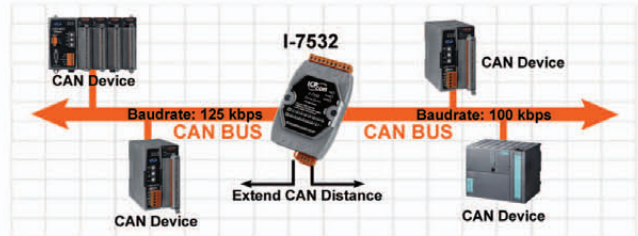

Industrial 4-port CAN bus Switch

I-2534 CR

NEW

I-2534 is a local CAN switch used to establish a connection between four CAN bus branches in a CAN network. It solves the problems of the daisy chain topology of the CAN bus. The transmission distance limitation of each CAN port of the I-2534 is independent, which means the total network distance can be extended.

- 4 CAN communication ports
- Fully compatible with the ISO 11898-2 standard
- Compatible with CAN specification 2.0 parts A and B
- Rotary switch for the baud rate of each CAN port
- Support baud rate: 5 k ~ 1 Mbps
- Message filter of each CAN port is configurable
- DIP switch for 120 Ω terminator resistor of CAN bus
- 3 kV DC-DC isolation
- 2500 V_{rms} isolation
- Power requirement Unregulated +10 V_{DC} ~ +30 V_{DC}
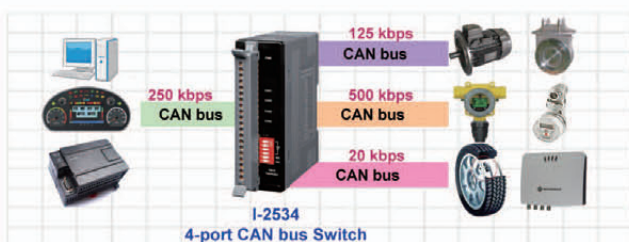
Ethernet to CAN/RS-232/RS-485 Converter

I-7540D CR

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 I-7540D controls networked communication and makes a transparent CAN-based application interface available to the user.

- 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 ~ 1 Mbps
- 2500 V_{rms} photo couple isolation on the CAN side
- Jumper for 120 Ω terminator resistor of CAN bus
- Watchdog inside
- 10/100 Base-T Ethernet port
- 1 kV galvanic isolation
- One CAN, RS-232, RS-485 and Ethernet channels
- Configure CAN, RS-232 and RS-485 parameters by web page
- Provide Max. 25 Ethernet clients connection
- Support for Virtual COM technology

CAN bus Introduction & Products
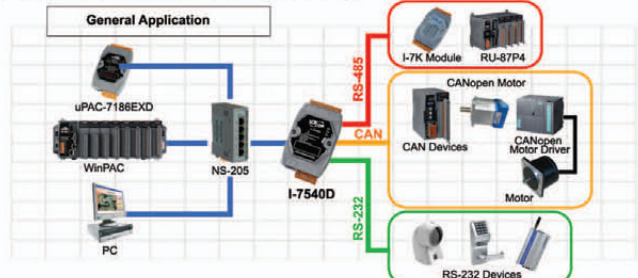
CAN bus to Wi-Fi Converter

I-7540D-WF
NEW

I-7540D-WF supports the wireless transmission of CAN data between two CAN networks or between a CAN network and an 802.11b/g WLAN network. It provides the function of CAN to WLAN converter and the wireless transparent transmission method on the CAN bus network.

- ✔ IEEE 802.11b/g compliant
- ✔ Wireless data transmission via WLAN
- ✔ Two different operation modes: infrastructure and ad-hoc
- ✔ Point to point or point to multi-points connection via wireless LAN
- ✔ Supports WEP, WPA and WPA2 encryption for wireless LAN
- ✔ Compatible with CAN specification 2.0 parts A and B
- ✔ Connect CAN networks via a WLAN bridge
- ✔ Communication efficiency (peak value): one-way is up to 700 fps (client->server, server->client), two-way 350 fps (client<=>server)
- ✔ Wireless communication: 100 m (Without PA)/300 m (With PA)

CAN bus to Fiber Converter

I-2532 CR

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

- ✔ 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 ~ 500 kbps
- ✔ 2500 Vrms photo couple isolation on the CAN side
- ✔ DIP switch for 120 Ω terminator resistor of CAN bus
- ✔ Watchdog inside
- ✔ 3 kV galvanic isolation
- ✔ Fiber Port: ST (Multi-mode)
- ✔ Wave Length: 850 nm
- ✔ Fiber Cable: 62.5/125 μm
- ✔ One CAN and one fiber channel

## CAN bus to Fiber Bridge

I-2533 CR
NEW

I-2533 is a local CAN bridge used to establish a connection between two CAN bus system via fiber optic. By using I-2533, the transmission distance limitation of the CAN bus system will not reduced because of CAN baud rate. It means that the total network distance can be extended. This feature helps users' applications more powerful and flexible.

- ✔ Fiber Port: ST (Multi-mode)
- ✔ Wave Length: 850 nm
- ✔ Fiber Cable: 62.5/125 μm
- ✔ Maximum transmission distance up to 2 km at any CAN baud rate
- ✔ 82C250 CAN transceiver
- ✔ 2500 Vrms iCoupler isolation on the CAN side
- ✔ Support both CAN 2.0A and CAN 2.0B
- ✔ Fully compatible with the ISO 11898-2 standard
- ✔ Build-in switch for 120 Ω terminator resistor
- ✔ Up to 100 CAN nodes on each channel
- ✔ Rotary switch for CAN baud rate configuration
- ✔ Allow user-defined baud rate
- ✔ Fiber broken line detection
- ✔ Utility tool for message filter configuration
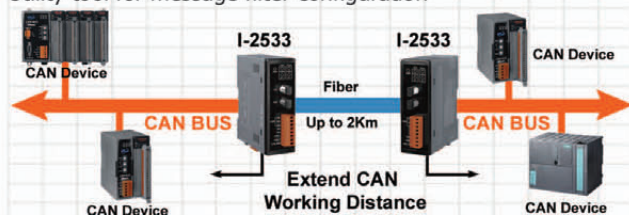
USB to CAN Converter

I-7565 CR

I-7565 is a cost-effective device for connecting the CAN bus to PC via the standard USB interface.

- ✔ 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 ~ 1 Mbps
- ✔ 2500 Vrms photo couple isolation on the CAN side
- ✔ Jumper for 120 Ω terminator resistor of CAN bus
- ✔ Watchdog inside
- ✔ Fully compliant with USB 1.1/2.0 (Full Speed)
- ✔ 3 kV galvanic isolation
- ✔ Powered by USB port
- ✔ One CAN port and one USB channel
- ✔ Support Windows 98/ME/2000/XP and Linux drivers
- ✔ Mount easily on DIN-Rai
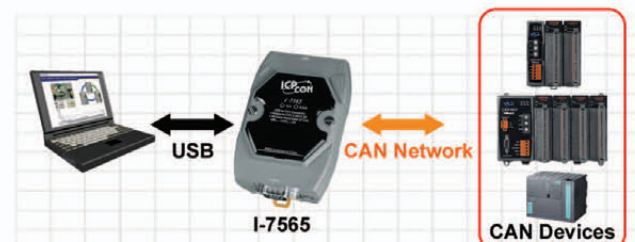
High Performance USB to CAN bus Converter

I-7565-H1 CR
NEW

I-7565-H1 is the high performance intelligent USB to CAN converter with one CAN channel. It can make data collection and processing of CAN bus network easier and quicker.

[OS Support]
Windows 2K/XP/Vista/7(32/64 bit), Linux

✔ Fully compatible with the ISO 11898-2 standard
✔ Compatible with CAN specification 2.0 parts A and B
✔ No external power supply (powered by USB)
✔ Integrated with one CAN bus interface
✔ Programmable CAN bus baud rate from 5 kbps ~ 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 Performance USB to 2-port CAN bus Converter

I-7565-H2 CR
NEW

I-7565-H2 is the high performance intelligent USB to CAN converter with two CAN channels. It can make data collection and processing of CAN bus network easier and quicker.

[OS Support]
Windows 2K/XP/Vista/7(32/64 bit), Linux

✔ Fully compatible with the ISO 11898-2 standard
✔ Compatible with CAN specification 2.0 parts A and B
✔ No external power supply (powered by USB)
✔ Integrated with two CAN bus interfaces
✔ Programmable CAN bus baud rate from 5 kbps ~ 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)
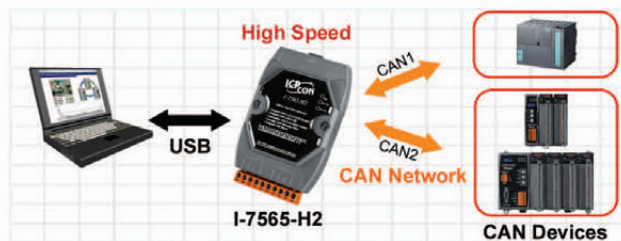✔ Removable terminal block, Mount easily on DIN-Rail

CAN bus PAC

CAN/RS-232/RS-485 Programmable Automation Controller

I-7188XBD-CAN CR

I-7188XBD-CAN PACs (Programmable Automation Controller) are powered by 80186, 40 MHz CPU with 512 KB SRAM and Flash. It can be applied to various applications because of its CAN port, RS-232 port and RS-485 port. Uses can program their application program flexibly with C/C++ language based on the built-in MiniOS7 operation system.

✔ 2500 Vrms photo-isolation protection on CAN bus
✔ Compatible with CAN specification 2.0 parts A and B
✔ Programmable transfer rate up to 1 Mbps
✔ Jumper for 120 Ω terminator resistor for CAN channel
✔ 64-bit hardware unique serial number inside
✔ COM driver support interrupt & 1 k QUEUE input buffer
✔ COM port: COM1, COM2
✔ Built-in RTC, NVRAM, EEPROM
✔ One digital Input channel and one open collector output channel
✔ 7-segment LED display
✔ Not support X-board
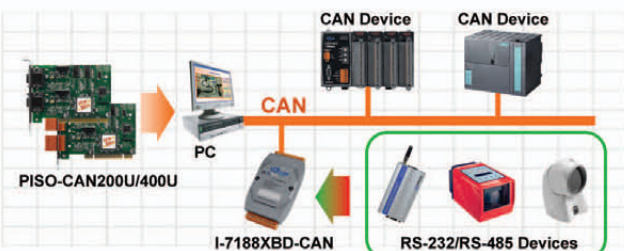
Ethernet/CAN/RS-232/RS-485 Programmable Automation Controller

uPAC-7186EXD -CAN CR

μPAC-7186EXD-CAN PACs (programmable Automation controller) are powered by 80186, 80 MHz CPU with 512 KB SRAM and Flash. It can adapt to the many applications because of its CAN, RS-232, RS-485 and Ethernet interfaces. Uses can program their application program flexibly with C/C++ language based on the MiniOS7 operation system.

✔ Support TCP, UDP, IP, ICMP, ARP
✔ 10/100 Base-T Ethernet
✔ Support for Virtual COM configuration
✔ 1000 Vdc voltage protection on CAN side
✔ Compatible with CAN specification 2.0 parts A and B
✔ Programmable transfer rate up to 1 Mbps
✔ Jumper for 120 Ω terminator resistor for CAN channel
✔ 64-bit hardware unique serial number inside
✔ COM port: COM1, COM2
✔ Built-in RTC, NVRAM, EEPROM
✔ 7-segment LED display

CAN bus Introduction & Products

CAN bus Introduction & Products
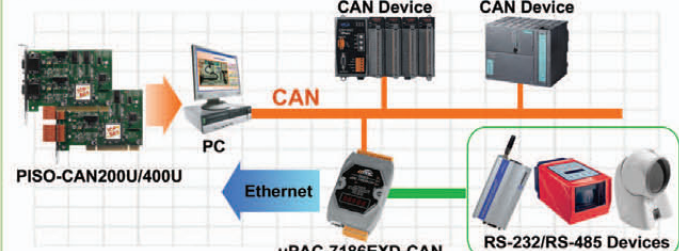
CAN bus Module

Standalone CAN Interface Expansion Module

I-87120 CR

I-87120 is developed to expand the CAN functions of ICP DAS products. However, the user-defined firmware supported by I-87120 can help users to set up the specific application easily. It supports WinPAC-8000, LinPAC-8000, XPAC-8000 and ViewPAC series PACs.

✔ 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 ~ 1 Mbps
✔ 2500 Vrms photo couple isolation on the CAN side
✔ DIP switch for 120 Ω terminator resistor of CAN bus
✔ Watchdog inside
✔ 3 kV galvanic isolation
✔ 80 MHz 186 CPU inside
✔ Serial bus communication with main unit
✔ Allow user-designed firmware
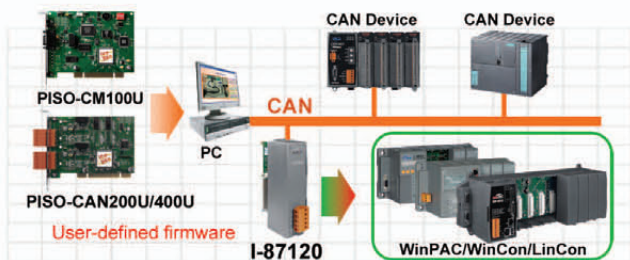
Standalone CAN Interface Expansion Module

I-8120W CR
NEW

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. It supports WinPAC-8000, XPAC-8000 and ViewPAC series PACs.

✔ 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 ~ 1 Mbps
✔ 2500 Vrms photo couple isolation on the CAN side
✔ DIP switch for 120 Ω terminator resistor of CAN bus
✔ Watchdog inside
✔ 3 kV galvanic isolation
✔ 80 MHz 186 CPU inside
✔ 8 K DPRAM inside
✔ Parallel bus communication with main unit
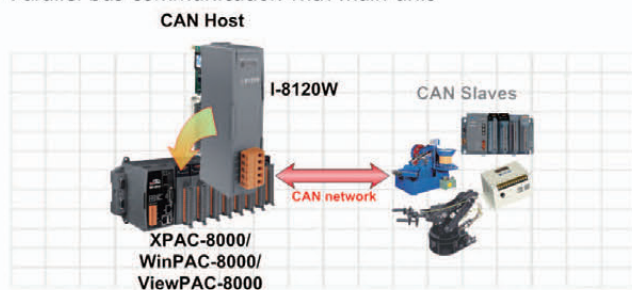
CAN bus Board

PCI Express CAN Communication Board

PEX-CAN200i-D
PEX-CAN200i-T
NEW

PEX-CAN200i series has 2 independent CAN ports with 5-Pin screw terminal connector or 9-Pin D-Sub connector with PCI Express x 1 bus. Every CAN channel has isolation protection circuit.
OS Support:
Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

✔ 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 ~ 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 drivers
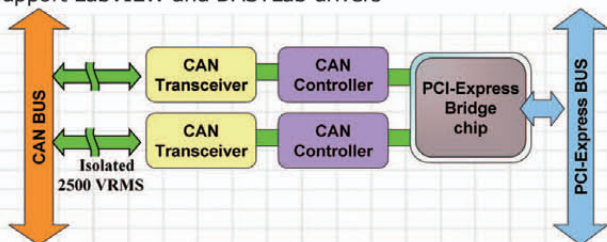
Universal PCI CAN Communication Board

PISO-CAN200U-D
PISO-CAN200U-T

PISO-CAN200U with universal PCI interface has two independent CAN bus communication ports with 5-Pin screw terminal connector or 9-Pin D-Sub connector.
OS Support:
Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

✔ 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 ~ 1 Mbps
✔ 2500 Vrms photo-couple isolation on the CAN side
✔ Built-in jumper for 120 Ω terminator resistor of CAN bus
✔ 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 drivers

CAN bus Introduction & Products

Universal PCI CAN Communication Board

PISO-CAN400U-D
PISO-CAN400U-T
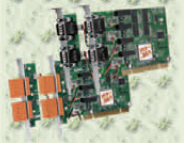
PISO-CAN400U with universal PCI interface has four independent CAN bus communication ports with 5-Pin screw terminal connector or 9-Pin D-Sub connector.
OS Support:
Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

✔ 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 ~ 1 Mbps
✔ 2500 V_{rms} 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
✔ 4 independent CAN channels
✔ Direct memory mapping to the CAN controller
✔ Provide VB, VC++, Delphi, Borland C++ builder demos
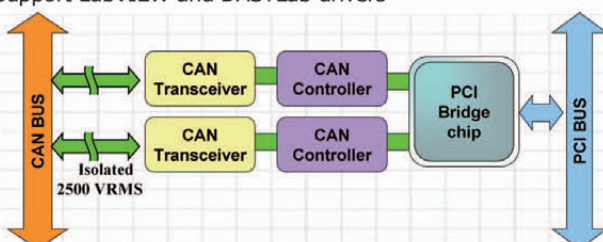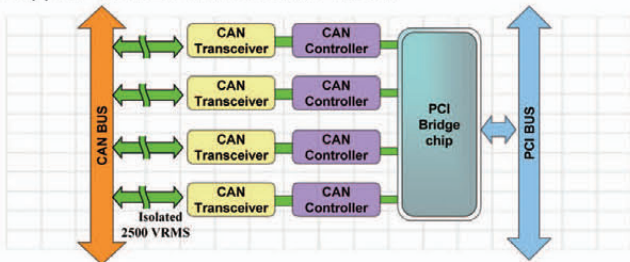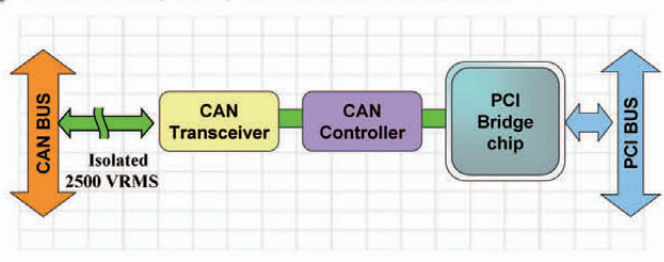✔ Support LabVIEW and DASYLab drivers

PCI-104 CAN Communication Board

PCM-CAN100-D CR
NEW

PCM-CAN100 is a CAN solution with PCI-104 interface. It complies with CAN 2.0A and CAN 2.0B specification, and can cover a wide range of CAN applications. The PCM-CAN100 provides one CAN port and one bypass CAN port. Both of them use the 9-Pin D-Sub connectors.
OS Support:
Win2K/XP/Vista/7/CE, Linux 2.6.31 ~ 2.6.34

✔ PCI-104 compliant
✔ 9-Pin male D-Sub connector
✔ Compatible with CAN 2.0 parts A and B
✔ Fully compatible with ISO 11898-2 standard
✔ Support CAN bard from 10 kbps ~ 1 Mbps
✔ 2500 V_{rms} photo couple isolation on the CAN bus
✔ Built-in jumper to select 120 Ω terminal resister
✔ 3 kV galvanic isolation
✔ 1 independent CAN channel and 1 bypass CAN channel
✔ Direct memory mapping to the CAN controller
✔ Provide VB6.0, VC++6.0, Delphi, BCB6.0 demos
✔ Driver for RTX, Linux, and Windows 2K/XP/WinCE

PCI-104 CAN Communication Board

PCM-CAN200-D CR
NEW

PCM-CAN200 is a CAN solution with PCI-104 interface. It complies with CAN 2.0A and CAN 2.0B specification, and can cover a wide range of CAN applications. The PCM-CAN200 provides two CAN ports. Both of them use the 9-Pin D-Sub connectors.
OS Support:
Win2K/XP/Vista/7/CE, Linux 2.6.31 ~ 2.6.34

✔ PCI-104 compliant
✔ 9-Pin male D-Sub connector
✔ Compatible with CAN 2.0 parts A and B
✔ Fully compatible with ISO 11898-2 standard
✔ Support CAN bard from 10 kbps ~ 1 Mbps
✔ 2500 V_{rms} photo couple isolation on the CAN bus
✔ Built-in jumper to select 120 Ω terminal resister
✔ 3 kV galvanic isolation
✔ 2 independent CAN channels
✔ Direct memory mapping to the CAN controller
✔ Provide VB6.0, VC++6.0, Delphi, BCB6.0 demos
✔ Driver for RTX, Linux, and Windows 2K/XP/WinCE

PC-104+ CAN Communication Board
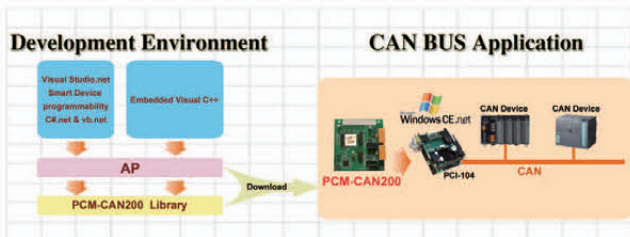
PCM-CAN200P-D CR
NEW

PCM-CAN200P has 2 independent CAN ports with 9-Pin D-Sub connector compatible PC-104+ specification.
OS Support:
Win2K/XP/Vista/7/CE, Linux 2.6.31 ~ 2.6.34

✔ PC-104+ compliant
✔ 9-Pin D-Sub connector
✔ Compatible with CAN specification 2.0 parts A and B
✔ Fully compatible with ISO 11898-2 standard
✔ Support CAN bard rate from 10 kbps ~ 1 Mbps
✔ 2500 V_{rms} 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

CAN bus Introduction & Products
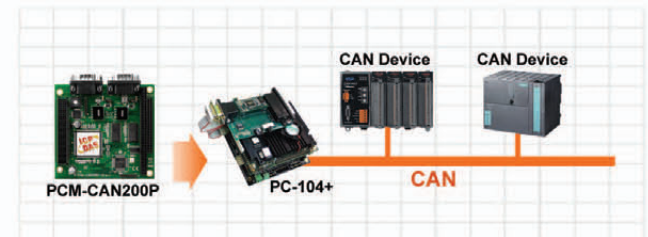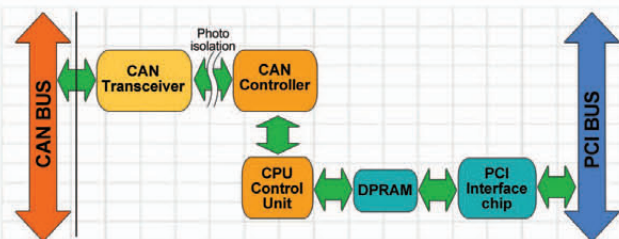
CAN bus Board

Intelligent CAN Communication Board

PISO-CM100U-D
PISO-CM100U-T

PISO-CM100U built-in 80186, 80 MHz, CPU represents a very powerful CAN card to process the real-time CAN messages providing the open structure for users to program in it to satisfy the high performance system.
OS Support: Windows 2K/XP/Vista

✔ 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 ~ 1 Mbps
✔ 2500 V$_{rms}$ 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
✔ Direct memory mapping to the CAN controller
✔ Provide VB, VC++, Delphi, Borland C++ builder demos
✔ Support LabVIEW and DASYLab drivers

Software Support

LabVIEW

ActiveX

Utility Tool

OPC Server　NAP OPC.CAN

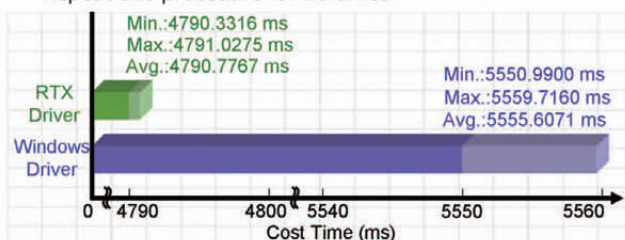RTX

Linux

SocketCAN　　DASYLab

CAN bus Software

CAN bus RTX Driver for PCI series CAN board

RTX CAN Driver

The RTX CAN Drvier helps users to develop the hightly real-time CAN bus applications on Windows OS by PISO-CAN series in ICP DAS. The name and parameters of the APIs in the RTX driver are the same as in the Windows driver. Users don't need to pay more efforts to study how to use the APIs of the RTX driver.

✔ Support interrupt function if the PISO-CAN series CAN card can get the independent IRQ
✔ Direct I/O control and highly real-time feature
✔ Support Windows2000 SP4, and Windows XP SP2 OS
✔ Support RTX version 8.0 or late
✔ Provide VC 6.0 demos
✔ Real-time Test:
　★ Platform: Windows XP SP2+PISO-CAN200E
　★ Device: I-7186EXD-CAN with MiniOS7 (single tasking OS)
　★ Method: Send and receive 10000 CAN 2.0B 8-byte messages. Repeat this procedure for 10 times

Min.:4790.3316 ms
Max.:4791.0275 ms
Avg.:4790.7767 ms

Min.:5550.9900 ms
Max.:5559.7160 ms
Avg.:5555.6071 ms

RTX Driver

Windows Driver

0　4790　　　4800　5540　　　5550　　5560
Cost Time (ms)

CAN bus LabVIEW Driver for PCI series CAN board

LabVIEW CAN Driver

In order to apply CAN bus technology under the LabVIEW development environment. ICP DAS develops the CAN LabVIEW driver and corresponding VI elements for all PISO-CAN series CAN cards. Using LabVIEW development environment with the CAN LabVIEW driver helps users finishing their job quickly and easily, and also simply the users' CAN applications.

✔ NI LabVIEW Software version 8.0 or later
✔ OS environment: Windows 2000 / XP
✔ Support CAN specification 2.0A and 2.0B
✔ Predefine 8 kinds of CAN baud rate: 10 k, 20 k, 50 k, 125 k, 250 k, 500 k, 800 k and 1M bps
✔ Allow user-defined CAN baud rate
✔ Provide 3000-record Rx buffer for each CAN port
✔ Support functions for directly accessing SJA1000 register
✔ Allow users to read the card No. and relative information
✔ Support timestamp information for each received CAN messages

CAN LabVIEW Driver

CAN bus Introduction & Products

CAN bus DASYLab Driver for PCI series CAN board

DASYLab CAN Driver

DASYLab CAN

DASYLab is a kind of data acquisition software. It lets you interactively develop PC-based applications by simply attaching functional icons. DASYLab offers real-time analysis, control, and the ability to create custom graphical user interfaces. In order to use DASYLab software with the PISO-CAN series cards, we provide the DASYLab CAN driver for the purpose.

✔ Support DASYLab software version 8.0
✔ OS environment: Windows 2000 / XP
✔ Support CAN specification 2.0A and 2.0B
✔ Allow user-defined CAN baud rate
✔ Support maximum 64 CAN ports
✔ Sample rate from 50 ~ 5000 Hz
✔ Block size range is 1 ~ 4096
✔ Provide Intel mode and Motorola mode for remote CAN device
✔ Support two kinds of languages, German and English
✔ Selectable data rates (baud): 10K, 20K, 50K, 125K, 250K, 500K, 800K, 1M, and user defined

CAN bus Linux Driver for PCI series CAN board

SocketCAN Device Driver

Linux SocketCAN

SocketCAN driver is a kind of device driver based on the Linux operating system, and it contains the implementation interface of the network stack and the hardware driver. The hardware manufacturers develop the hardware driver of SocketCAN driver for their hardware interface, and the network stack provides the standard BSD Socket APIs for users.

✔ Support Linux kernel version 2.6.31~2.6.34 (x86 hardware platform only)
✔ Provide CANopen/DeviceNet master static library
✔ Standard interface for SocketCAN package. Users can use extended BSD socket APIs, you can program the CAN application as building a socket program
✔ Support Virtual CAN interface. Users can map several virtual CAN port into one physical CAN port. Each virtual CAN port has its own socket. Through these sockets, users can build the multi-thread application more easily
✔ Provide the RAW socket, CANopen master and DeviceNet master demos
✔ Good price-performance for economical applications
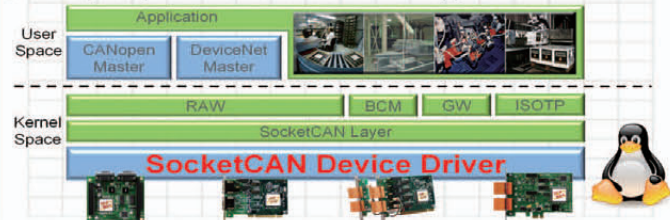
CAN bus ActiveX Object for PCI series CAN board

PISOCANX ActiveX Object

ActiveX

PISOCANX uses ActiveX technology to simply the procedure while developing the application by using PISO-CAN series CAN card. The ActiveX object (OCX) can be not only used in general program development environment, but used in the SCADA software which supports the ActiveX technology.

✔ OS environment: Windows 2000 / XP
✔ Allow polling mode and interrupt mode
✔ Provide 3000-record Rx buffer for each CAN port
✔ Support functions for directly accessing SJA1000 register
✔ Allow users to read the card No. and relative information
✔ Support timestamp information for each received CAN messages
✔ VC6, VB demos are given

CAN bus OPC Server for PCI/USB/Ethernet/UART series CAN Module

NAPOPC.CAN DA Server

OPC Server

NAPOPC.CAN DA Server is a CAN OPC server to be as an expert bridge between ICP DAS CAN products and the OPC client of the third party software. Besides, it also provides the easy-to-use integral APIs to access the different CAN ports without through the OPC server.

✔ OS environment: Windows 2000 / XP
✔ Follow OPC 1.0, OPC 2.0 Data Access Standards
✔ Configure CAN baud rate with OPC utility
✔ Configure CAN hardware filter by the APIs of the Virtual CAN Driver
✔ Provide CAN Engine Utility to monitor the CAN messages
✔ Collect the data from the different CAN devices in one OPC server
✔ Provide the CAN devices and the virtual CAN port No. mapping table
✔ Load previous configuration or scan all CAN devices manually while the Virtual CAN Driver boots up
✔ Provide the APIs of the Virtual CAN Driver

CAN bus Introduction & Products

CAN bus Power Meter

### 3 Phase/4 Loops 1 Phase Compact Power Meter

**PM-2133-CAN**
PM-2134-CAN
NEW

PM-213X-CAN series power meter provides the CAN bus interface for users to easily gather the real-time power consumption information in their CAN applications. The PM-213x-CAN provides the Auto-Response mode which responses messages at regular intervals automatically. It makes the communication more efficient when collecting a lot of remote power information. The polling mode offers the precise information of every step required by the monitors.

Features

- True RMS energy and power parameters measurement in compact size
- Easy wiring for on-line installation
- RS-485 communication supported Modbus RTU protocol
- CAN Bus Communication Compatible with CAN specification 2.0B
- Wh accuracy better than 1%(PF=1)
- With wired clip-on CT (support input current up to 200A)
- PM-2133-CAN is 3 phase power meter
- PM-2134-CAN is 4 Loops 1 Phase Compact Power Meter

CAN bus Communication

Polling Mode
Ask
Response
Ask
Response

Auto-Response Mode
Response
Response
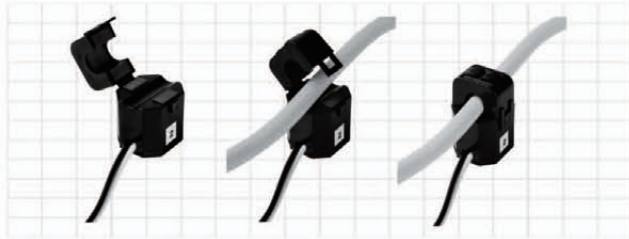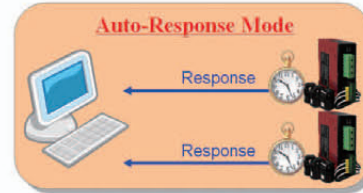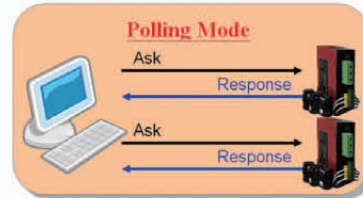
Accessories

CAN bus Connector

CNT-CAN
NEW

CNT-CAN connector is used to connect a CAN bus node to the CAN bus line featuring quick-connect technology, making the stripping of bus conductors superfluous. The connector is quick to install, and has a plastic housing and integrated terminating resistors. Anyway the CNT-CAN could link a CAN device to a CAN bus line easily and fast.

Features

- Built-in switch to select 120Ω terminal resistor
- 2 cable entries
- Cable outlet : 90° cable outlet
- Connector : 9-pin, D-Sub female connector
- Programming connection : 9-pin, D-Sub male connector
- Baud rate : 10kbps ~ 1Mbps
- Operating temperature : -25°C ~ 75°C
- Storage temperature : -30°C ~ 80°C
- Humidity : 10 ~ 90% RH, non-condensing

I-7565/I-7565-H1   I-7530A

CNT-CAN   CNT-CAN

CAN bus Netwrok (CANopen, DeviceNet, J1939...)

CAN-2000 Series

Hardware Information

34.5   40.4
42.5
34.8
Unit: mm

CAN_SHLD
D-Sub 9 male
D-Sub 9 female
120Ω

CAN_L
CAN_H
CAN_GND
CAN_V+
CAN_V-
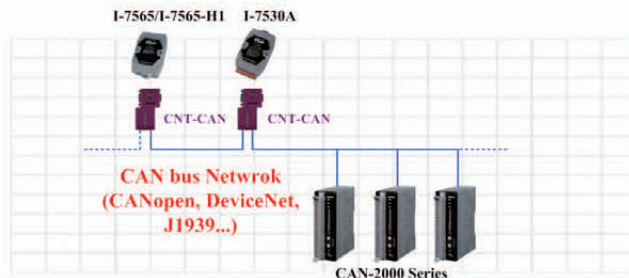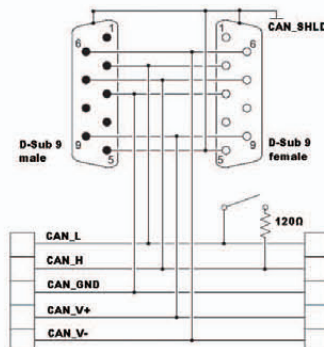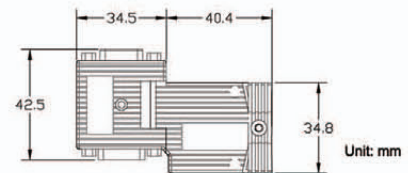
3. CANopen Introduction & Products

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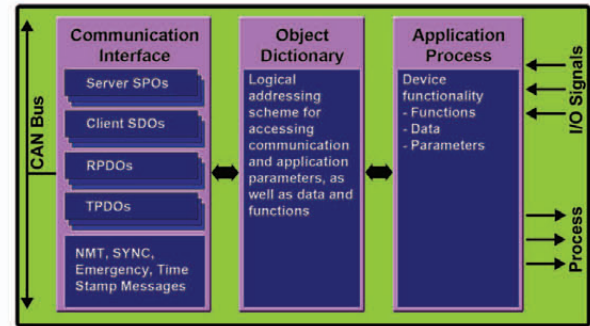
✳ CANopen Features

- ✔ Allow multi-master architecture on one bus
- ✔ 10 k, 20 k, 125 k, 250 k, 500 k, 800 k, 1 Mbps baud rate
- ✔ The bus length is from 25 m (1 Mbps) to 5 km (10 kbps)
- ✔ Easy access to all device parameters
- ✔ Device synchronization
- ✔ Cyclic and event-driven data transfer
- ✔ Up to 128 nodes can be participated in the same CANopen network
- ✔ Support Guarding and Heartbeat protection

Selection Guide

| Model Name	Description	Page
CANopen Gateway		
I-7231D	CANopen Slave/DCON Master Gateway	3-2
I-7232D	CANopen Slave/Modbus RTU Master Gateway	
GW-7433D	CANopen Master/Modbus TCP&RTU Slave Gateway	
CANopen Module		
I-7565-CPM	USB to 1-port CANopen Master Converter	3-3
I-87123	CANopen Master/Modbus TCP&RTU Slave Gateway bus	
I-8123W	High Performance Intelligent 1-port CANopen Master Communication Module with Parallel bus	
CANopen Board		
PISO-CPM100U-D	Intelligent 1-port CANopen Master Universal PCI interface Board	3-4
PISO-CPM100U-T		
CANopen Remote I/O Unit		
CAN-8123/8223	1/2 Slot General Purpose CANopen Slave I/O Unit	3-4
CAN-8423	4 Slot General Purpose CANopen Slave I/O Unit	
CANopen Remote I/O Module		
CAN-2053C	CANopen 16-channel Isolated DI Module	3-5
CAN-2057C	CANopen 16-channel Isolated DO Module	
CAN-2054C	CANopen 8-channel DI and 8-channel DO Module	
CAN-2015C	CANopen 8-channel RTD Input Module	
CAN-2017C	CANopen 8-channel Analog Input Module	3-6
CAN-2018C	CANopen 8-channel Thermocouple Input Module	
CAN-2024C	CANopen 4-channel Analog Output Module	
CAN-2088C	CANopen PWM Module	
CANopen Software		
Compact CANopen Library	CANopen Master Library for PISO-CAN / PEX-CAN / PCM-CAN series CAN board	3-7
CANopen Master Utility	CANopen Master Utility for PCI series CAN board and PISO-CPM100U	
CANopen Master InduSoft Driver	CANopen Master InduSoft Driver for PISO-CPM100U and I-7565-CPM	
CANopen Master LabVIEW Driver	CANopen Master LabVIEW Driver for PISO-CPM100U and I-7565-CPM	

CANopen Introduction & Products

CANopen Gateway

CANopen Slave/DCON Master Gateway

I-7231D CR

I-7231D is a CANopen slave device. So, it can produce or consume the PDO messages, receive the SDO message with proper responses, and deal with the NMT messages from NMT master.

- ✔ CANopen Version: DS-301 v4.02 , DSP-401 v2.01
- ✔ Error Control: Node Guarding protocol
- ✔ 2500 Vrms photo couple isolation on the CAN side
- ✔ Jumper for 120 Ω terminator resistor of CAN bus
- ✔ Watchdog inside
- ✔ 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
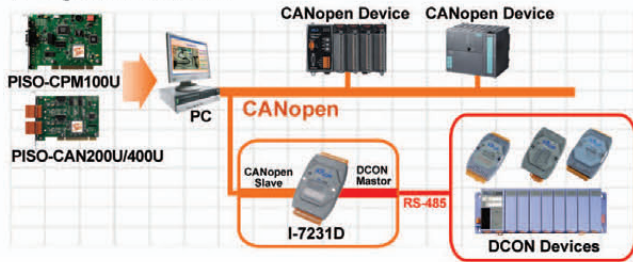
CANopen Slave/Modbus RTU Master Gateway

I-7232D CR

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 v4.02 , DSP-401 v2.01
- ✔ Error Control: Node Guarding protocol
- ✔ 2500 Vrms photo couple isolation on the CAN side
- ✔ Jumper for 120 Ω terminator resistor of CAN bus
- ✔ Watchdog inside
- ✔ 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 series modules
- ✔ 1 kV galvanic isolation
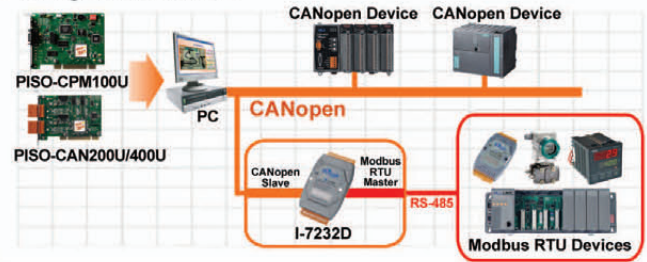
CANopen Master/Modbus Server Gateway

GW-7433D CR
NEW

GW-7433D is a solution that provides a communication transformation between CANopen protocol and Modbus/TCP protocol. It solves a mission-critical problem, and connecting an existed CANopen network with Ethernet-base master device as long as this master device supports Modbus/TCP protocol. It enables CANopen networks to be coupled together with the Internet/Ethernet, whereby remote monitoring and controlling is achieved.

- ✔ CANopen Version: DS-301 v4.02
- ✔ Error Control: Node Guarding protocol
- ✔ Emergency Message: Yes
- ✔ 2500 Vrms photo couple isolation on the CAN side
- ✔ Jumper for 120 Ω terminator resistor of CAN bus
- ✔ Watchdog inside
- ✔ NMT: Master
- ✔ PDO: Event-triggered, RTR
- ✔ Support Max. 50 TxPDOs, 50 RxPDOs, 15 SDOs to SDO server
- ✔ Allow 5 Modbus TCP masters to access GW-7433 simultaneously
- ✔ Configuration by utility via Ethernet
- ✔ 1 kV galvanic isolation
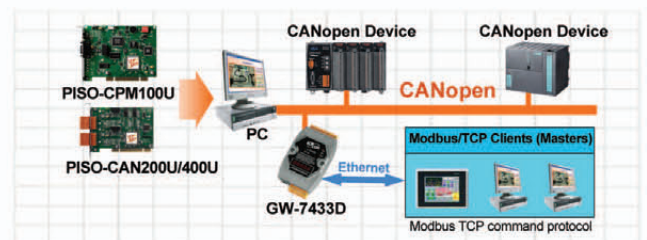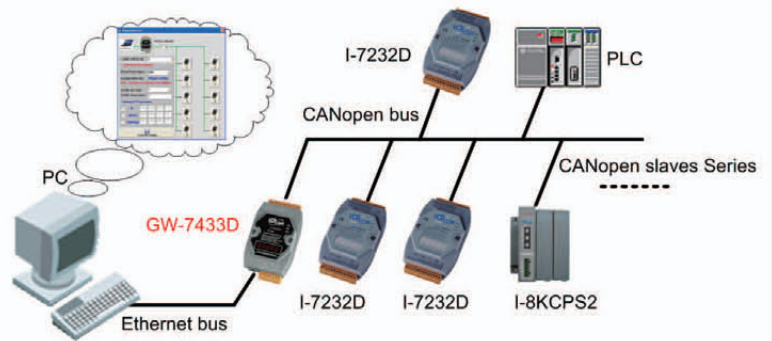
CANopen Introduction & Products

CANopen Module

USB/CANopen Master Converter

I-7565-CPM CR
NEW

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 Version: DS-301, version 4.02
✔ Baud Rate: 10 k, 20 k, 50 k, 125 k, 250 k, 500 k, 800 k, 1 Mbps
✔ Support Node Guarding and Heartbeat consumer protocol
✔ SYNC producer 1 ms ~ 65535 ms
✔ Support dynamic PDO/SDO segment protocol
✔ Slave Node: 127 nodes Max.
✔ Support Auto-scan slave device function
✔ Support save and load command
✔ Free utility to configure I-7565-CPM and update firmware
✔ Windows 2000/XP drivers supported
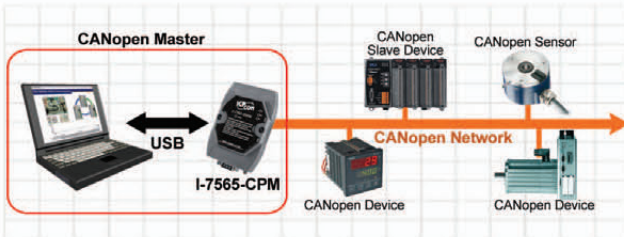
Standalone CANopen Master Expansion Module

I-87123 CR

I-87123 main control unit is specially designed for the master device of CANopen protocol. It supplies many features for users, such as dynamic PDO, EMCY object, error output value, SYNC object, ...and etc. It supports WinPAC-8000, LinPAC-8000, XPAC-8000 and ViewPAC series PACs.
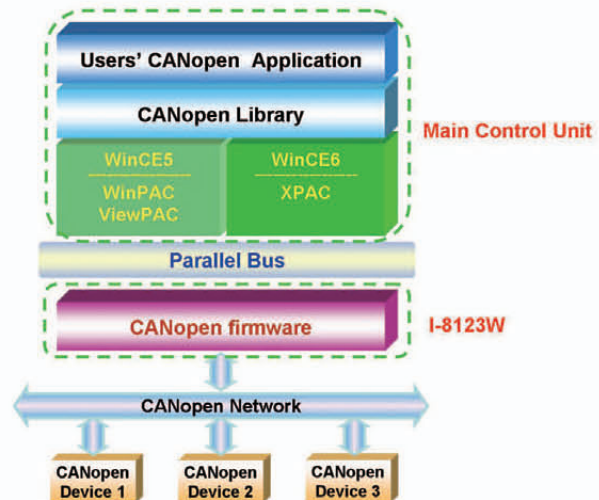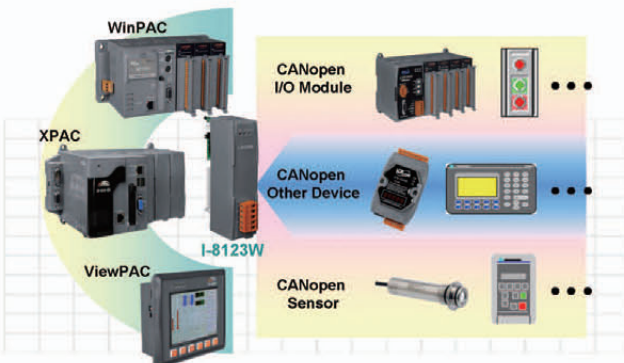
✔ CANopen Version: DS-301 v4.02
✔ Error Control: Node Guarding protocol
✔ Emergency Message: Yes
✔ 2500 Vrms photo couple isolation on the CAN side
✔ DIP switch for 120 Ω terminator resistor of CAN bus
✔ NMT: Master
✔ PDO: Event-triggered, RTR, cyclic, acyclic SYNC and dynamic PDO Mapping
✔ Support WinPAC, LinPAC, XPAC and ViewPAC series PACs
✔ Provide C/C++ function libraries and demos
✔ Serial bus communication
✔ 3 kV galvanic isolation
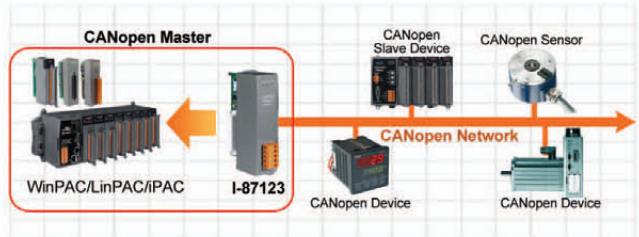
Standalone CANopen Master Expansion Module

I-8123W CR
NEW

I-8123W follows CiA CANopen specification DS-301 V4.02. It is a high price/performance CANopen master. With the ViewPAC or WinPAC series MCU (main control unit), it can be generally applied in the industrial automation, building automation, vehicle, and embedded control network. Besides, owing to the feature of building the CANopen protocol firmware inside, users can easily access the slave devices via I-8123W without studying or dealing the complex CANopen protocol. It is helpful to reduce the development cycle time and let users set up their CANopen application more quickly and easily.

✔ NMT Master
✔ CANopen Version: DS-301 V4.02
✔ Support Node Guarding and Heartbeat Consumer error control protocol
✔ Provide EMCY and NMT Error Control interrupt service function
✔ Provide "master listen mode"
✔ Provide Dynamic PDO, acyclic and cyclic transmission
✔ Support ViewPAC and WinPAC series MCU

CANopen Introduction & Products

CANopen Board

Intelligent 1-port CANopen Master Board

PISO-CPM100U-D
PISO-CPM100U-T

PISO-CPM100U has followed the CiA CANopen specification DS-301 V4.02. With the built-in 80186 80M Hz CPU, this card can be applied in high transmission applications. The 16-bit on-board microcontroller with real-time O.S., MiniOS7, allows many features, such as real-time message transmission and reception, filtering, preprocessing, and storage of CAN messages. It supports the timestamp of PDO message with at least 1 ms precision. Assorted with the free tool (CPM_Utility), users can easily manage and integrate with CANopen industrial devices.

- Universal PCI card, supports both 5 V and 3.3 V PCI bus
- CANopen Version: DS-301 v4.02
- Error Control: Node Guarding and Heartbeat consumer protocol
- 2500 Vrms photo-couple isolation on the CAN side
- Built-in jumper for 120 Ω terminator resistor of CAN bus
- NMT: Master
- PDO: Event-triggered, RTR, cyclic, acyclic SYNC and dynamic PDO Mapping
- Support multi-master architecture
- 80186, 80 MHz CPU inside
- 3 kV galvanic isolation
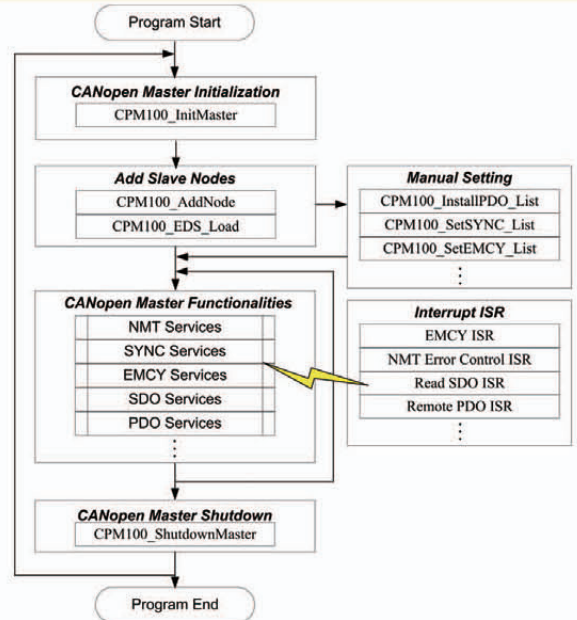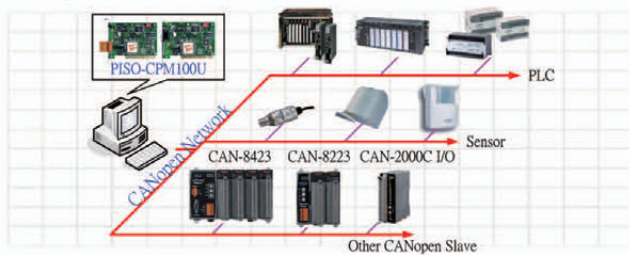
CANopen Remote I/O Unit

CANopen Remote I/O Unit with 1/2 I/O Expansions

CAN-8123
CAN-8223

CAN-8123 and CAN-8223 supports 1 and 2 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. In addition, we also provide CAN-8x23 Utility to allow users to create the EDS file dynamically.

- NMT: Slave
- Error Control: Node Guarding/Heartbeat Producer
- No. of SDOs: 1 Server, 0 Client
- No. of PDOs: 16Rx, 16Tx
- PDO Modes: Event Triggered, RTR, Cyclic and Acyclic SYNC
- Emergency Message available
- CANopen Version: DS-301 v4.02 , DSP-401 v2.1
- Produce EDS file Dynamically
- Support Hot Swap and Auto-Configuration for high profile I-87K I/O modules
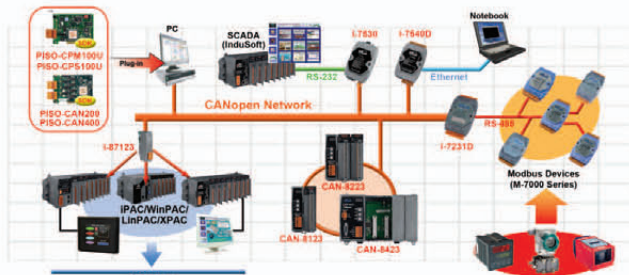
CANopen Remote I/O Unit with 4 I/O Expansions

CAN-8423

CAN-8423 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. In addition, we also provide CAN-8x23 Utility to allow users to create the EDS file dynamically.

- NMT: Slave
- Error Control: Node Guarding/Heartbeat Producer
- No. of SDOs: 1 Server, 0 Client
- No. of PDOs: 16Rx, 16Tx
- PDO Modes: Event Triggered, RTR, Cyclic and Acyclic SYNC
- Emergency Message available
- CANopen Version: DS-301 v4.02 , DSP-401 v2.1
- Produce EDS file Dynamically
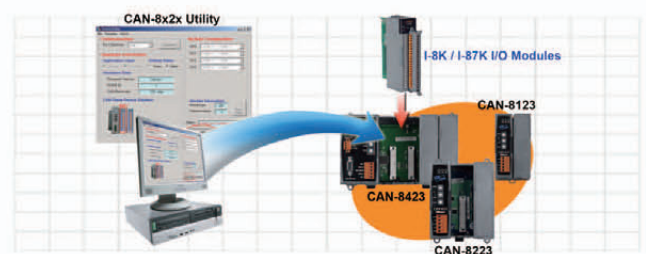- Support Hot Swap and Auto-Configuration for high profile I-87K I/O modules

CANopen Remote I/O Module

16-channel Isolated DI module of CANopen Slave

CAN-2053C
NEW

CAN-2053C has 16-channel isolated sink/source input and it can be used to various applications, such as PNP, NPN, TTL, relay contact and so forth. By owing to the CANopen masters of ICP DAS or other manufactory, users can quickly build a CANopen network to approach user's requirements.

✔ NMT Slave
✔ Providing I/O Pair-connection function
✔ Provide default EDS file
✔ Passed the validation of CiA CANopen conformance test tool
✔ Support Polarity Input Setting and Save
✔ Support Dynamic PDO
✔ Support Application: PNP, NPN, TTL, and Relay Contact
✔ ESD Protection 4 kV Contact for each channel
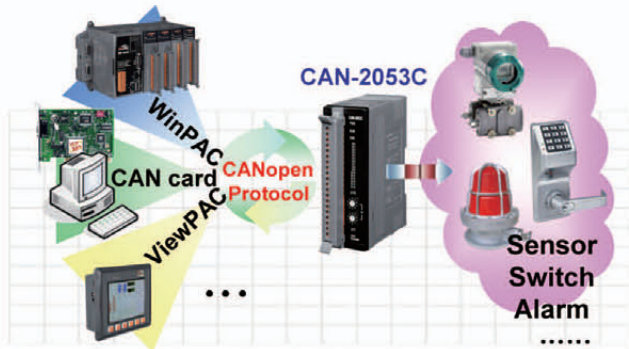
16-channel Isolated DO module of CANopen Slave

CAN-2057C
NEW

CAN-2057C module follows the DS-301 version 4.02 and DSP-401 version 2.1. CAN-2057C had passed the validation of the CiA CANopen Conformance Test tool. Therefore, users can use it with standard CANopen master easily by applying the EDS file.

✔ NMT Slave
✔ Providing I/O Pair-connection function
✔ Provide default EDS file
✔ Passed the validation of CiA CANopen conformance test tool
✔ Support Polarity Output Setting and Save
✔ Support Error Value Output Setting and Save
✔ Support Dynamic PDO
✔ Support Application: Drive Relay, Resistance Load
✔ ESD Protection 4 kV Contact for each channel
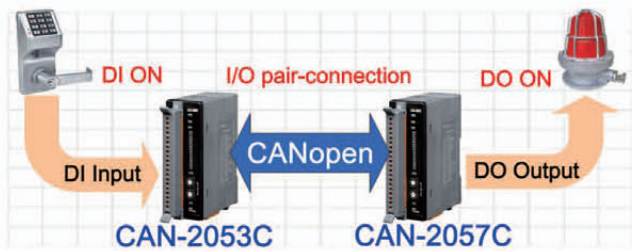
8-ch DI & 8-ch DO module of CANopen Slave

CAN-2054C
NEW

CAN-2054C has 8 isolated sink/source input channels and 8 isolated sink output channels. It can be used to various applications, such as PNP, NPN, TTL, relay contact and so forth. By owing to the CANopen masters of ICP DAS, you can quickly build a CANopen network to approach your requirements.

✔ NMT Slave
✔ Providing Pair-Connect function
✔ Provide default EDS file
✔ ESD Protection 4 KV Contact for each channel
✔ Support Power Supply +10 ~ +30 V_{DC}
✔ Support CiA DS-301 v4.02, DSP-401 v2.1
✔ Support PDO Mapping
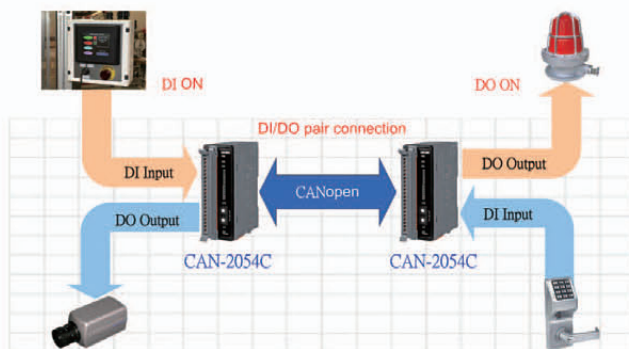
8-channel RTD Input Module of CANopen Slave

CAN-2015C
Available soon

CAN-2015C module follows the CiA DS-301 version 4.02 and DSP-401 version 2.1. You can access the thermocouple input status and set the configuration by using standard CANopen protocol. CAN-2015C has passed the validation of the CiA CANopen conformance test tool. Therefore, you can use it with standard CANopen master easily by applying the EDS file.

✔ NMT Slave
✔ NMT Error Control support Guarding and Heartbeat
✔ Provide default EDS file
✔ Passed the validation of CiA CANopen conformance test tool
✔ ESD Protection 4 KV Contact for each channel
✔ Support Power Supply +10 ~ +30 V_{DC}
✔ Support CiA DS-301 v4.02, DSP-401 v2.1
✔ Support Dynamic PDO
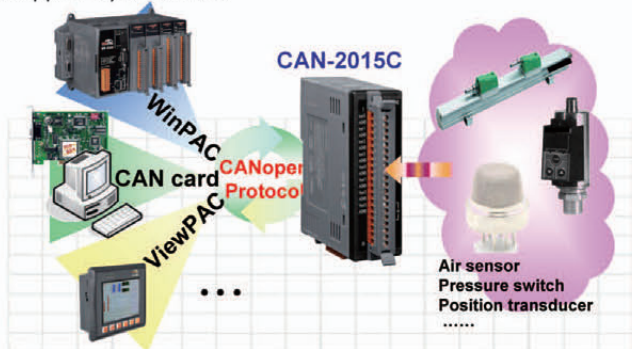
Analogue Input module of CANopen Slave

CAN-2017C
NEW

CAN-2017C module follows the CiA DS-301 version 4.02 and DSP-401 version 2.1. You can access the analogue input status and set the configuration by using standard CANopen protocol. CAN-2017C has passed the validation of the CiA CANopen Conformance Test tool.

✔ NMT Slave
✔ NMT Error Control support Guarding and Heartbeat
✔ Provide default EDS file
✔ Passed the validation of CiA CANopen conformance test tool
✔ Sampling mode support normal and fast mode
✔ ESD Protection 4 KV Contact for each channel
✔ Support Power Supply +10 ~ +30 Vdc
✔ Support CiA DS-301 v4.02, DSP-401 v2.1

CANopen Master
CANopen Network
Other CANopen Device
CAN-2017C

8-channel Thermocouple Input Module of CANopen Slave

CAN-2018C
Available soon

CAN-2018C has passed the validation of the CiA CANopen conformance test tool. Therefore, you can use it with standard CANopen master easily by applying the EDS file. CAN-2018C has 8 differential thermocouple input channels. By the CANopen masters of ICP DAS, you can quickly build a CANopen network to approach your requirement.

✔ NMT Slave
✔ NMT Error Control support Guarding and Heartbeat
✔ Provide default EDS file
✔ Passed the validation of CiA CANopen conformance test tool
✔ ESD Protection 4 KV Contact for each channel
✔ Support Power Supply +10 ~ +30 Vdc
✔ Support CiA DS-301 v4.02, DSP-401 v2.1
✔ Support Dynamic PDO

WinPAC **CAN-2018C**
CAN card **CANopen Protocol**
ViewPAC
Air sensor Pressure switch Position transducer ......

Analog Output Module of CANopen Slave

CAN-2024C
NEW

CAN-2024C module follows the CiA DS-301 version 4.02 and DSP-401 version 2.1. You can access the analogue output status and set the configuration by using standard CANopen protocol. CAN-2024C has passed the validation of the CiA CANopen conformance test tool.

✔ NMT Slave
✔ Read-Back Accuracy ±1% of FSR
✔ Provide default EDS file
✔ ESD Protection 4 KV Contact for each channel
✔ Support Power Supply +10 ~ +30 Vdc
✔ Support CiA DS-301 v4.02, DSP-401 v2.1
✔ Support PDO Mapping

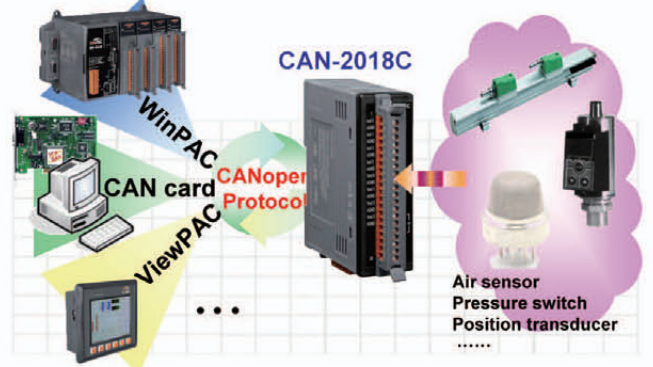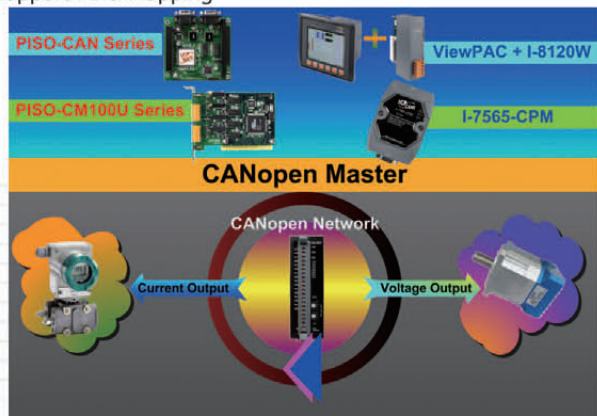**PISO-CAN Series** **ViewPAC + I-8120W**
PISO-CM100U Series **I-7565-CPM**
CANopen Master
CANopen Network
Current Output **Voltage Output**

PWM module of CANopen Slave

CAN-2088C
NEW

PWM (Pulse width modulation) is a powerful technique for controlling analog circuits. By using digital outputs, it can generate a waveform with variant duty cycle and frequency to control analog circuits. CAN-2088C, a CAN bus remote I/O modules with CANopen protocol, provides 8 PWM output channels and 8 digital inputs channels with high-speed counter function.

✔ Hardware-controlled PWM output
✔ PWM output frequency: 0.2 Hz ~ 500 kHz with 0.1%~99.9% duty cycle
✔ PWM Output Modes: software trigger / hardware trigger
✔ Trigger each PWM output individually or all PWM outputs synchronously
✔ Support Burst output mode and Continue output mode
✔ Provide 32-bit 500 kHz high-speed counter for each DI channel
✔ Pass the validation of CANopen conformance test
✔ Provide EDS file for CANopen master interface

CANopen Master **Software Trigger** **CAN-2088C** **MCU** **PWM (Burst Mode)** **Motor**
or
Alarm **Hardware Trigger**
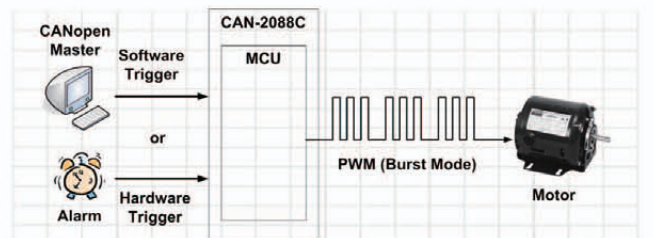
CANopen Software

Compact CANopen Library for PISO-CAN series

CANopen Library

CANopen Master library is used to help users to establish the connection with CANopen slave devices easily and reduce the development time by PISO-CAN series. In this tool kit, we also provide CANopen diagnosis application.

✔ NMT: Master
✔ CANopen Version: DS-301 v4.02
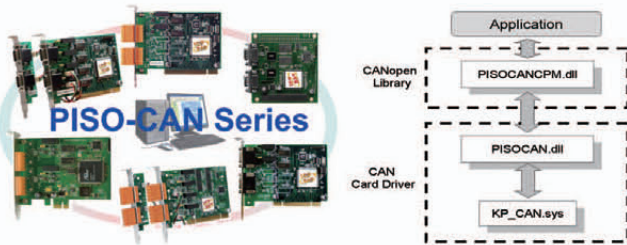✔ Support up to 127 nodes
✔ Error Control: Support Guarding protocol
✔ Support EMCY receiving
✔ Provide dynamic PDO functions
✔ Support SYNC protocol
✔ Support SDO segment and block protocol
✔ Driver support Win 98/ME/NT/2K/XP, and Linux

CANopen Master Utility for PCI series CAN board and PISO-CPM100U

CANopen Master Utility

In order to help users for using the CANopen master communication boards, the PISO-CPM100(U), easily, we provides the CPMUtility application tool. The utility includes several functions, such as NMT protocol, SYNC protocol, EMCY protocol, SDO protocol, PDO protocol, and so forth.

✔ Auto-scan all the CANopen master devices that the CPMUtility has supported
✔ Auto-scan all the CANopen slave devices on the CANopen network
✔ Support EDS file
✔ Dynamic PDO object setting easily
✔ Guarding Event and Heartbeat Event detection
✔ EMCY message receiving
✔ Maximum 5 SYNC message producers per CANopen master
✔ Support PISO-CPM100(U), I-8123W, I-87123 for version 2.00 later
✔ Support OS: WinCE5.0, and Win2K/XP/Vista/7 with 32-bit system

CANopen Master InduSoft Driver for PISO-CPM100U and I-7565-CPM

InduSoft Driver

In order to implement CANopen communication by InduSoft software, ICP DAS provides a set of CANopen component in the InduSoft driver. By means of this driver, you don't need to have the complex and abstruse technology of the CANopen protocol. Only few simple steps can finish the communication between your PC and the remote CANopen devices.

✔ Integrates with InduSoft Web Studio SCADA
✔ Communicates with the Multiple I-7565-CPM (multi-port) and PISO-CPM100 Series modules at the same time
✔ Auto detecting CANopen slave devices and CANopen I/O monitor
✔ NMT: Master
✔ CANopen Version: DS-301 v4.02
✔ Slave nodes support 1 ~ 127
✔ Support Guarding and Heartbeat protocol
✔ Support EMCY and SYNC protocol
✔ Provide dynamic PDO functions
✔ Support SDO segment protocol
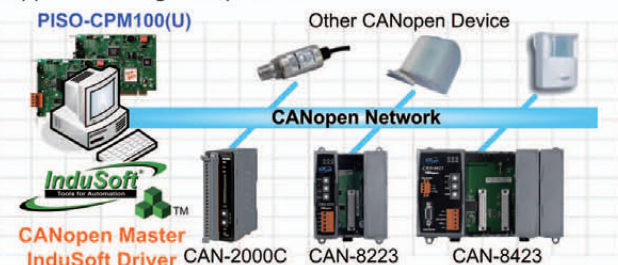
CANopen Master LabVIEW Driver for PISO-CAN series

LabVIEW Driver

In order to implement CANopen communication by NI LabVIEW software, ICP DAS provides a set of CANopen component in the LabVIEW driver. You only need to have the basic technology of the CANopen protocol. And then through few simple steps can finish the communication between your PC and the remote CANopen devices.

✔ NMT: Master
✔ CANopen Version: DS-301 v4.02
✔ Slave nodes support 1 ~ 127
✔ Error Control: Support Guarding protocol
✔ Support EMCY and SYNC protocol
✔ Provide dynamic PDO functions
✔ Support SDO segment and block protocol
✔ Driver support Windows 98/ME/NT/2K/XP
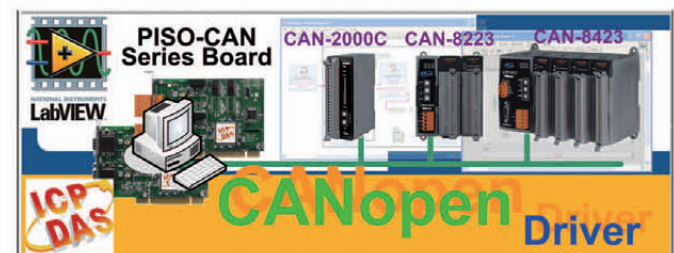
4. DeviceNet Introduction & Products

The DeviceNet network based on CAN bus 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 diagnosis or easy accessibility through hardwired I/O interfaces.

❋ DeviceNet Features

- ✔ Trunk line, drop line configuration
- ✔ Node removal without breaking trunk line
- ✔ Up to 64 addressable nodes
- ✔ Signal and 24 V_{DC} power in the same cable
- ✔ Selectable data rates (125 k, 250 k, 500 kbps)
- ✔ 120 Ω terminal at each trunk line end
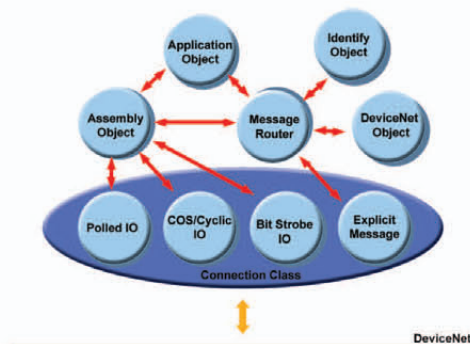
Selection Guide

| Model Name	Description	Page
DeviceNet Gateway		
I-7241D	DeviceNet Slave/DCON Master Gateway	4-2
I-7242D	DeviceNet Slave/Modbus RTU Master Gateway	
GW-7243D	DeviceNet Slave/Modbus TCP & RTU Master Gateway	
GW-7434D	DeviceNet Master/Modbus TCP & RTU Slave Gateway	
DeviceNet Module		
I-7565-DNM	USB to 1-port DeviceNet Master Converter	4-3
I-87124	Intelligent 1-port DeviceNet Master Communication Module with Serial bus	
I-8124W	High Performance Intelligent 1-port DeviceNet Master Communication Module with Parallel bus	
DeviceNet Board		
PISO-DNM100U-D	Intelligent 1-port DeviceNet Master Universal PCI interface Board	4-4
PISO-DNM100U-T		
PISO-DNS100U-D	Intelligent 1-port DeviceNet Slave Universal PCI interface Board	
PISO-DNS100U-T		
DeviceNet Remote I/O Unit		
CAN-8124/8224	1/2 Slot General Purpose DeviceNet Slave I/O Unit	4-4
CAN-8424	4 Slot General Purpose DeviceNet Slave I/O Unit	
DeviceNet Remote I/O Module		
CAN-2053D	DeviceNet 16-channel Isolated DI Module	4-5
CAN-2057D	DeviceNet 16-channel Isolated DO Module	
CAN-2054D	DeviceNet 8-channel DI and 8-channel DO Module	
CAN-2015D	DeviceNet 8-channel RTD Input Module	
CAN-2017D	DeviceNet 8-channel Analog Input Module	4-6
CAN-2018D	DeviceNet 8-channel Thermocouple Input Module	
CAN-2024D	DeviceNet 4-channel Analog Output Module	
CAN-2088D	DeviceNet PWM Module	
DeviceNet Software		
Compact DeviceNet Library	DeviceNet Master Library for PISO-CAN / PEX-CAN / PCM-CAN series CAN board	4-7
DeviceNet Master Utilty	DeviceNet Master Utility for PCI series CAN board and PISO-DNM100U	
DeviceNet Master InduSoft Driver	DeviceNet Master InduSoft Driver for PISO-DNM100U and I-7565-DNM	
DeviceNet Master LabVIEW Driver	DeviceNet Master LabVIEW Driver for PISO-DNM100U and I-7565-DNM	

DeviceNet Gateway

DeviceNet Slave/DCON Master Gateway

I-7241D CR

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

✔ 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 V$_{rms}$ photo couple isolation on the CAN side
✔ Jumper for 120 Ω terminator resistor of CAN bus
✔ Watchdog inside
✔ Provide dynamic Assembly Objects mapping
✔ Support Offline Connection Set, Device Heartbeat message and Device Shutdown message
✔ Support Max. 15 I-7000/I-87K I/O series modules
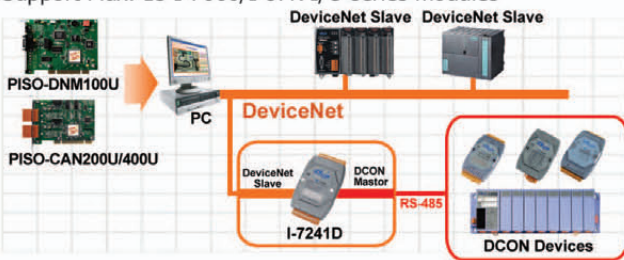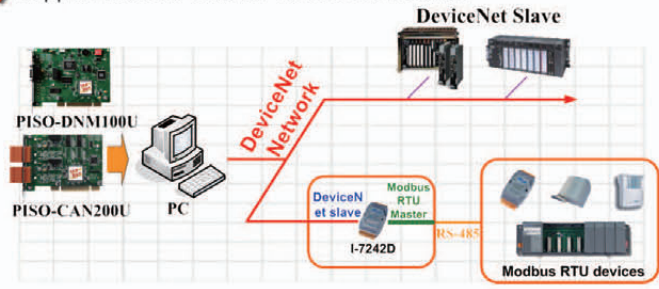

DeviceNet Slave/Modbus RTU Master Gateway

I-7242D CR

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's a Group 2 Only Slave device, and supports "Predefined Master/Slave Connection Set".

✔ 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 V$_{rms}$ photo couple isolation on the CAN side
✔ Jumper for 120 Ω terminator resistor of CAN bus
✔ Watchdog insideProvide dynamic Assembly Objects mapping
✔ Support Offline Connection Set, Device Heartbeat message and Device Shutdown message
✔ Support Max. 10 Modbus RTU series modules

DeviceNet Slave/Modbus TCP & RTU Master Gateway

GW-7243D CR
NEW

GW-7243D is one of DeviceNet products in ICP DAS and it stands as a DeviceNet slave to Modbus TCP/RTU/ASCII master gateway device. In DeviceNet network, it functions as a "Group 2 Only Server" device. In Modbus network, GW-7243D sends request messages to access the Modbus slave as a master by DeviceNet object definition.

✔ Group 2 Only Server DeviceNet subscriber
✔ Support Explicit and Poll Connection
✔ Maximum support 10 Modbus RTU/ASCII commands for each COM port
✔ Maximum support 4 Modbus TCP devices
✔ Maximum support 5 Modbus TCP commands for each Modbus TCP device
✔ Support Modbus function codes:
   0x01, 0x02, 0x03, 0x04, 0x05, 0x06, 0x0F and 0x10
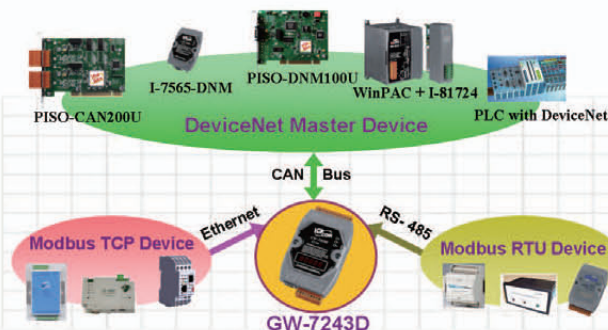
DeviceNet Master/Modbus TCP & RTU Slave Gateway

GW-7434D CR
NEW

GW-7434D is a DeviceNet master to Modbus TCP/RTU master gateway device, and is applied for connecting an existing DeviceNet network to Ethernet-base PLCs and PC-based system. The GW-7434D supports "Predefined Master/Slave Connection Set" and "Group 2 Only Server" functions.

✔ Supports maximum DeviceNet devices up to 63
✔ Predefined Master/Slave Connection Set
✔ Supports one Poll, one Bit-Strobe, one COS or one Cyclic IO connection for each DeviceNet device
✔ Converts single Modbus TCP to multi Modbus RTU devices, setting by Utility
✔ Supports VxComm technique for every COM ports of controllers, setting by Utility

DeviceNet Introduction & Products

DeviceNet Introduction & Products
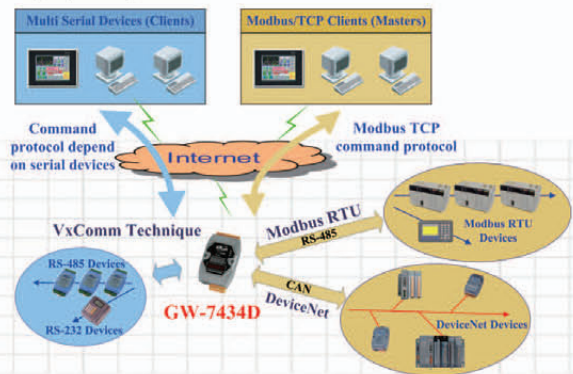
DeviceNet Module

USB/DeviceNet Master Converter

I-7565-DNM CR
NEW

I-7565-DNM is a DeviceNet master solution for USB interface built-in 80186, 80 MHz CPU. It can easily control/configure DeviceNet slave nodes via PC.

✔ Comply with DeviceNet specification volume I, release 2.0 & volume II, release 2.0
✔ Support Predefined Master/Slave Connection Set
✔ I/O Operating Modes: Polling, Bit-Strobe, Change of State/Cyclic
✔ 2500 V_{rms} photo-couple isolation on the CAN side
✔ Built-in jumper for 120 Ω terminator resistor of CAN bus
✔ Built-in watchdog
✔ Support UCMM function and Group 2 client
✔ Support auto-scan slave device function
✔ Auto-reconnect when the connection is broken
✔ 3 kV galvanic isolation

USB
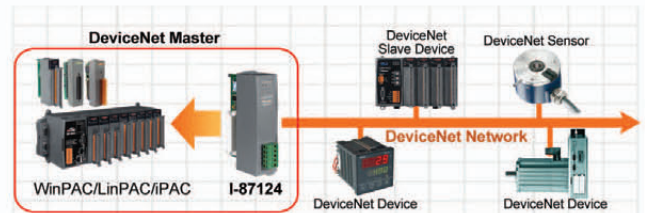DeviceNet Network
I-7565-DNM
DeviceNet Slaves Nodes
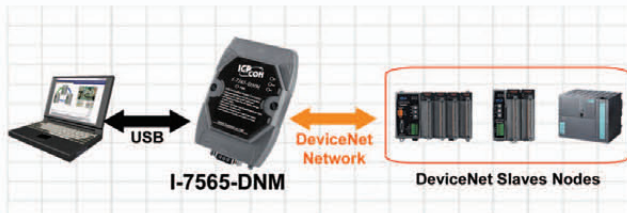
Standalone DeviceNet Master Expansion Module

I-87124 CR

I-87124 can represent an economic solution of DeviceNet application and a DeviceNet master device on the DeviceNet network. I-87124 supports Group 2 and UCMM functions to communication with slave devices. It supports WinPAC-8000, LinPAC-8000, XPAC-8000 and iPAC-8000 series.

✔ DeviceNet Version: Volume I & II, Release 2.0
✔ Programmable Master MAC ID and baud rate
✔ Baud Rate: 125 k, 250 k, 500 kbps
✔ Support Group 2 and UCMM connection
✔ I/O Operating Modes: Poll, Bit-Strobe, Change of State/Cyclic
✔ I/O Length: 512 bytes Max. (Input/Output) per slave
✔ Slave Node: 63 nodes Max.
✔ Support Auto-search slave device function
✔ Support on-line adding and removing devices
✔ Support Auto-detect Group 2 and UCMM device
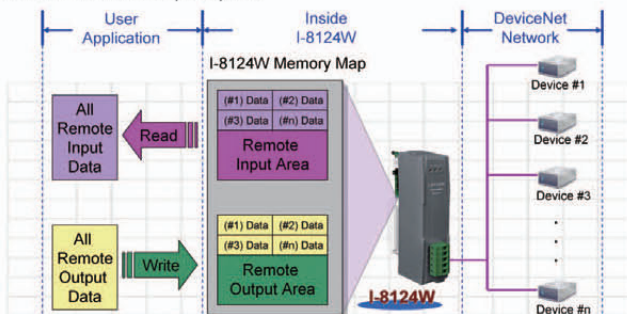✔ Auto-reconnect when the connection is broken
✔ Status LED: RUN, MS, NS

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

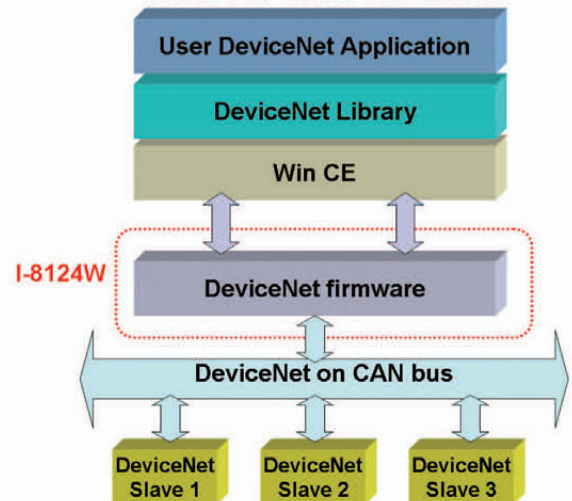### Standalone DeviceNet Master Expansion Module

I-8124W CR
NEW

I-8124W can represent an economic solution of DeviceNet application and be a DeviceNet master device on the DeviceNet network. I-8124W supports Group 2 and UCMM functions simultaneously. It can be installed in ViewPAC or WP-8000 series PAC. It is popularly applied in the industrial automation, building automation, vehicle, and embedded control network. There is a complete DeviceNet protocol firmware in the I-8124W. The users can easily access the slave device via I-8124W in the ViewPAC and WP-8000 and need not to deal with the complex DeviceNet protocol. The uses can use as easy as "Read/Write" functions to access slave I/O data.

✔ DeviceNet Version: Volume I & II, Release 2.0
✔ Programmable Master MAC ID and baud rate
✔ Baud Rate: 125 k, 250 k, 500 kbps
✔ Support Group 2 and UCMM connection
✔ I/O Operating Modes: Poll, Bit-Strobe, Change of State/Cyclic
✔ I/O Length: 512 bytes Max. (Input/Output) per slave
✔ Slave Node: 63 nodes Max.
✔ Support Auto-search slave device function
✔ Auto-reconnect when the connection is broken
✔ Status LED: RUN, MS, NS

User Application
Inside I-8124W
DeviceNet Network
I-8124W Memory Map
All Remote Input Data — Read — Remote Input Area
All Remote Output Data — Write — Remote Output Area
I-8124W
Device #1
Device #2
Device #3
Device #n

ViewPAC WinPAC XPAC

User DeviceNet Application
DeviceNet Library
Win CE
I-8124W   DeviceNet firmware
DeviceNet on CAN bus
DeviceNet Slave 1   DeviceNet Slave 2   DeviceNet Slave 3

DeviceNet Board

Intelligent 1-port DeviceNet Master Board

PISO-DNM100U-D
PISO-DNM100U-T
NEW

PISO-DNM100U has completed DeviceNet master function according to DeviceNet Group 2 only client. 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
- ✔ 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 and Group 2 client
- ✔ Support auto-scan slave device function
- ✔ Auto-reconnect when the connection is broken
- ✔ 3 kV galvanic isolation 80186, 80 MHz CPU inside

Intelligent 1-port DeviceNet Slave Board

PISO-DNS100U-D
PISO-DNS100U-T
NEW

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 and not Support UCMM
- ✔ 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 card
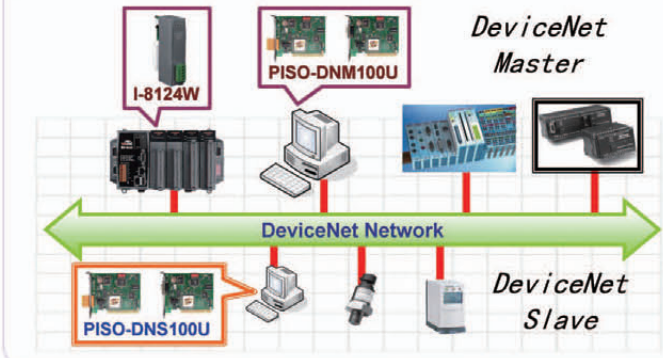
DeviceNet Remote I/O Unit

DeviceNet Remote I/O Unit with 1/2 I/O Expansions

CAN-8124
CAN-8224

CAN-8124/CAN-8224 main unit based on the modular design offers many good features to the users and provides more flexibility in data acquisition and control system. CAN-8124 and CAN-8224 are the DeviceNet Group 2 only Server devices.

- ✔ Number of Nodes: 64 Max.
- ✔ Baud Rate: 125, 250, 500 kbps
- ✔ Support Message Groups: Group 2 only Server
- ✔ I/O Operating Modes: Poll, Bit-Strobe, Change of State / Cyclic
- ✔ Device Heartbeat & Shutdown Message
- ✔ Produce EDS file Dynamically
- ✔ No. of Fragment I/O: 128 Bytes Max. (Input / Output)
- ✔ MAC ID Setting by Rotary Switch
- ✔ Baud Rate Setting by Rotary Switch
- ✔ Status LED: NET, MOD, PWR
- ✔ Support Hot Swap and Auto-Configuration for high profile I-87K I/O Modules
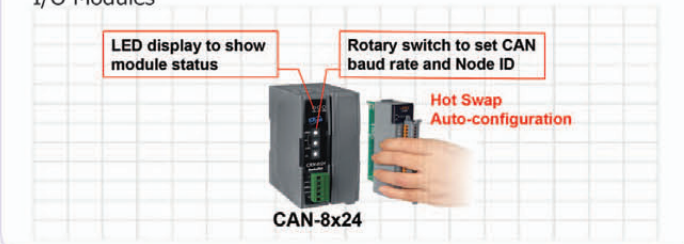
DeviceNet Remote I/O Unit with 4 Expansion Slots

CAN-8424

CAN-8424 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-8424 Utility tool to allow users to configure and create the EDS file for the specific IO modules plugged in.

- ✔ DeviceNet Version: Volume I & II, Release 2.0
- ✔ Number of Nodes: 64 Max.
- ✔ Baud Rate: 125, 250, 500 kbps
- ✔ Support Group 2 only Server
- ✔ I/O Operating Modes: Poll, Bit-Strobe, Change of State / Cyclic
- ✔ Device Heartbeat & Shutdown Message
- ✔ Produce EDS file Dynamically
- ✔ No. of Fragment I/O: 128 Bytes Max. (Input / Output)
- ✔ MAC ID and Baud Rate Setting by Rotary Switch
- ✔ Status LED: NET, MOD, PWR
- ✔ Support Hot Swap and Auto-Configuration for high profile I-87K I/O Modules

DeviceNet Introduction & Products
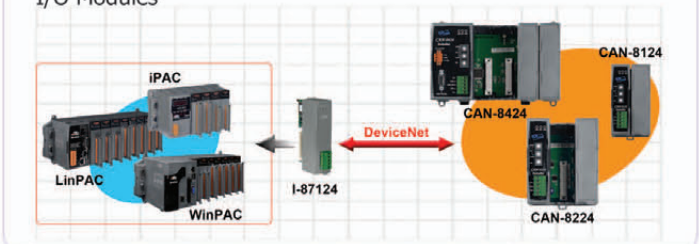
DeviceNet Remote I/O Module

16-channel Isolated DI Module of DeviceNet Slave

CAN-2053D
NEW

CAN-2053D follows DeviceNet specification Volume I/II, Release 2.0. User can access the digital output status and set the configuration via DeviceNet EDS file. CAN-2053D has 16-channel isolated sink/source input and it can be used to various applications, such as PNP, NPN, TTL, relay contact and so forth.

- ✔ DeviceNet general I/O slave devices
- ✔ Group 2 Only Server (non UCMM-capable)
- ✔ Support Predefined Master/Slave Connection Set
- ✔ Connection supported:
    - 1 connection for Explicit Messaging
    - 1 connection for Polled I/O
    - 1 connection for Bit-Strobe I/O connection
- ✔ Provide EDS file for DeviceNet master interface
- ✔ Support Application: PNP, NPN, TTL, and Relay Contact
- ✔ ESD Protection 4 kV Contact for each channel

CAN-2053D
WinPAC
CAN card
DeviceNet Protocol
ViewPAC
Sensor Switch Alarm
....

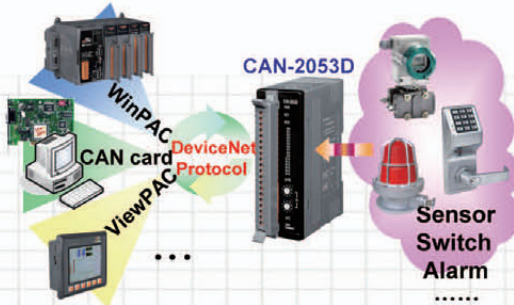### 16-channel Isolated DO Module of DeviceNet Slave

CAN-2057D
NEW

CAN-2057D follows DeviceNet specification Volume I/II, Release 2.0. User can access the digital output status and set the configuration via DeviceNet EDS file. The CAN-2057D has 16 Digital output channels with Open Collector output type and can be used to develop powerful and cost effective digital control system.

- ✔ DeviceNet general I/O slave devices
- ✔ Group 2 Only Server (non UCMM-capable)
- ✔ Support Predefined Master/Slave Connection Set
- ✔ Connection supported:
    - 1 connection for Explicit Messaging
    - 1 connection for Polled I/O
    - 1 connection for Bit-Strobe I/O connection
- ✔ Support DeviceNet heartbeat and shutdown messages
- ✔ Provide EDS file for DeviceNet master interface
- ✔ Support Application: Drive Relay, Resistance Load
- ✔ ESD Protection 4 kV Contact for each channel

CAN-2057D
WinPAC
CAN card
DeviceNet Protocol
ViewPAC
Alarm Relay Actuator
......

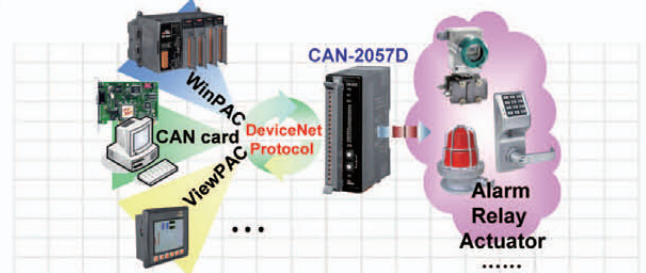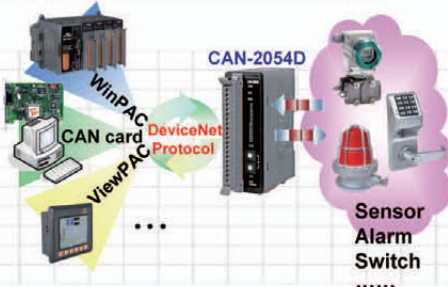### Digital Input and Output Module of DeviceNet Slave

CAN-2054D
NEW

CAN-2054D follows DeviceNet specification Volume I/II, Release 2.0. User can access the digital I/O status and set the configuration via DeviceNet EDS file. This module has 8-channel isolated sink/source input and 8-channel isolated sink output. It can be applied to various applications, such as PNP, NPN, TTL, relay contact and so forth.

- ✔ DeviceNet general I/O slave devices
- ✔ Comply with DeviceNet specification Volume I, Release 2.0 & Volume II, Release 2.0, Errata 5
- ✔ Group 2 Only Server (non UCMM-capable)
- ✔ Support Predefined Master/Slave Connection Set
- ✔ Connection supported:
    - 1 connection for Explicit Messaging
    - 1 connection for Polled I/O
    - 1 connection for Bit-Strobe I/O connection
- ✔ Support DeviceNet heartbeat and shutdown messages
- ✔ Provide EDS file for DeviceNet master interface

CAN-2054D
WinPAC
CAN card
DeviceNet Protocol
ViewPAC
Sensor Alarm Switch
......

8-channel RTD Input Module of DeviceNet Slave

CAN-2015D
Available soon

CAN-2015D follows DeviceNet specification Volume I/II, Release 2.0. User can access the RTD input status and set the configuration via DeviceNet EDS file. This module has 8 differential RTD input channels. By the DeviceNet masters of ICP DAS, you can quickly build a DeviceNet network to approach your requirements.

- ✔ DeviceNet general I/O slave devices
- ✔ Comply with DeviceNet specification Volume I, Release 2.0 & Volume II, Release 2.0, Errata 5
- ✔ Group 2 Only Server (non UCMM-capable)
- ✔ Support Predefined Master/Slave Connection Set
- ✔ Connection supported:
    - 1 connection for Explicit Messaging
    - 1 connection for Polled I/O
    - 1 connection for Bit-Strobe I/O connection
- ✔ Support DeviceNet heartbeat and shutdown messages
- ✔ Provide EDS file for DeviceNet master interface

DeviceNet Master
DeviceNet Network
Other DeviceNet Device
CAN-2015D

8-channel Analog Input Module of DeviceNet Slave

CAN-2017D
Available soon

CAN-2017D follows DeviceNet specification Volume I/II, Release 2.0. User can access the analog input status and set the configuration via DeviceNet EDS file. This module has 8 differential analog input channels. By the DeviceNet masters of ICP DAS, you can quickly build a DeviceNet network to approach your requirements.

- DeviceNet general I/O slave devices
- Comply with DeviceNet specification Volume I, Release 2.0 & Volume II, Release 2.0, Errata 5
- Group 2 Only Server (non UCMM-capable)
- Support Predefined Master/Slave Connection Set
- Connection supported:
    - 1 connection for Explicit Messaging
    - 1 connection for Polled I/O
    - 1 connection for Bit-Strobe I/O connection
- Support DeviceNet heartbeat and shutdown messages
- Provide EDS file for DeviceNet master interface

8-channel Thermocouple Input Module of DeviceNet Slave

CAN-2018D
Available soon

CAN-2018D follows DeviceNet specification Volume I/II, Release 2.0. User can access the thermocouple input status and set the configuration via DeviceNet EDS file. This module has 8 differential thermocouple input channels. By the DeviceNet masters of ICP DAS, you can quickly build a DeviceNet network to approach your requirements.

- DeviceNet general I/O slave devices
- Comply with DeviceNet specification Volume I, Release 2.0 & Volume II, Release 2.0, Errata 5
- Group 2 Only Server (non UCMM-capable)
- Support Predefined Master/Slave Connection Set
- Connection supported:
    - 1 connection for Explicit Messaging
    - 1 connection for Polled I/O
    - 1 connection for Bit-Strobe I/O connection
- Support DeviceNet heartbeat and shutdown messages
- Provide EDS file for DeviceNet master interface
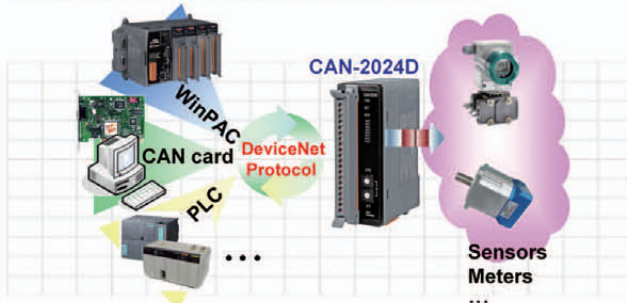

4-channel Analog Output Module of DeviceNet Slave

CAN-2024D
NEW

CAN-2024D follows DeviceNet specification Volume I/II, Release 2.0. User can access the analog output status and set the configuration via DeviceNet EDS file. This module has 4-channel 14-bit analog output. By the DeviceNet masters of ICP DAS, you can quickly build a DeviceNet network to approach your requirements.

- DeviceNet general I/O slave devices
- Comply with DeviceNet specification Volume I, Release 2.0 & Volume II, Release 2.0, Errata 5
- Group 2 Only Server (non UCMM-capable)
- Support Predefined Master/Slave Connection Set
- Connection supported:
    - 1 connection for Explicit Messaging
    - 1 connection for Polled I/O
    - 1 connection for Bit-Strobe I/O connection
- Support DeviceNet heartbeat and shutdown messages
- Provide EDS file for DeviceNet master interface


PWM Module of DeviceNet Slave

CAN-2088D
NEW

PWM (Pulse width modulation) is a powerful technique for controlling analog circuits. By using digital outputs, it can generate a waveform with variant duty cycle and frequency to control analog circuits. CAN-2088D, a CAN bus remote I/O modules with DeviceNet protocol, provides 8 PWM output channels and 8 digital inputs channels with high-speed counter function. It

- Hardware-controlled PWM output
- PWM output frequency: 0.2 Hz ~ 500 kHz with 0.1%~99.9% duty cycle
- PWM Output Modes: software trigger / hardware trigger
- Trigger each PWM output individually or all PWM outputs synchronously
- Support Burst output mode and Continue output mode
- Provide 32-bit 500 kHz high-speed counter for each DI channel
- Pass the validation of DeviceNet conformance test
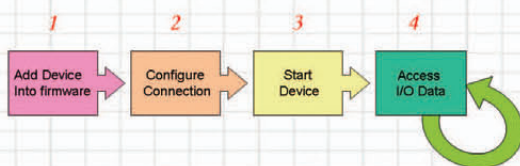- Provide EDS file for DeviceNet master interface
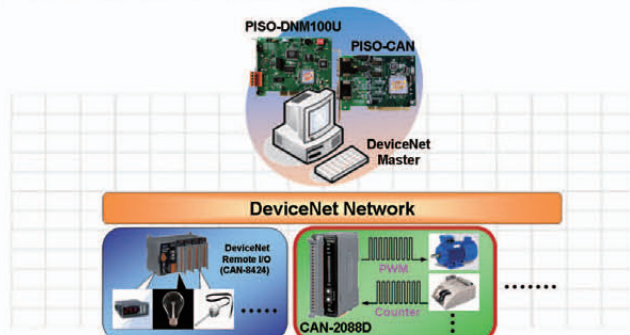
DeviceNet Software

Compact DeviceNet Library for PISO-CAN series

DeviceNet Library

ICP DAS DeviceNet Master Library (DLL functions) for Windows 98/ME/NT/2000/XP provides users to establish DeviceNet network rapidly by Master/Slave connection model. The users can develop various DeviceNet applications via this library.

✔ DeviceNet Version: Volume I & II, Release 2.0
✔ Programmable Master MAC ID and baud rate
✔ Baud Rate: 125k, 250k, 500 kbps
✔ Support Group 2 and UCMM connection
✔ I/O Operating Modes: Poll, Bit-Strobe, Change of State / Cyclic
✔ I/O Length: 512 Bytes Max. (Input/Output) per slave
✔ Slave Node : 63 nodes Max.
✔ Support Auto-search slave device function
✔ Support on-line adding and removing devices
✔ Support Auto-detect Group 2 and UCMM device
✔ Auto-reconnect when the connection is broken
✔ Support Linux driver

1 Add Device Into firmware → 2 Configure Connection → 3 Start Device → 4 Access I/O Data

DeviceNet Master Utility

DeviceNet Master Utility DNM

The "DNM Utility" (DeviceNet Master Utility) is the greatest tool. It supports to search all devices in the network. Anymore, it also can diagnose the remote slave devices. After configuring the I/O connection, the information would be saved into the DeviceNet master hardware.

✔ Selectable baud rate and master MAC ID setting
✔ Diagnose the remote slave devices
✔ Searching the DeviceNet slave on demand
✔ Importing and exporting the slave information
✔ Support to update firmware of DeviceNet hardware
✔ Support Group 2 and UCMM remote devices
✔ Easy to use with the graphic interface
✔ Reduce the development loading

POLL STROBE COS CYCLIC

DeviceNet Master InduSoft Driver

InduSoft Driver — InduSoft DeviceNet

In order to implement DeviceNet communication by InduSoft software, ICP DAS provides a set of DeviceNet component in the InduSoft driver. By means of this driver, you don't need to have the complex and abstruse technology of the DeviceNet protocol. Only few simple steps can finish the communication between your PC and the remote DeviceNet devices.

✔ Integrates with InduSoft Web Studio SCADA
✔ A Tag supports Max. 4 Bytes data length
✔ Communicates with the Multiple I-7565-DNM (multi-port) and PISO-DNM100U Series modules at the same time
✔ Programmable MAC ID Setting
✔ Auto-detect DeviceNet slave devices and supports DeviceNet I/O monitor
✔ Support Group 2 and UCMM devices
✔ Selectable data rates (baud): 125k, 250k, 500 kbps

DeviceNet Master InduSoft Driver

InduSoft Tools for Automation

DeviceNet Master LabVIEW Driver

LabVIEW Driver — LabVIEW DeviceNet

In order to implement DeviceNet communication by NI LabVIEW software, ICP DAS provides a set of DeviceNet component in the LabVIEW driver. The LabVIEW driver includes a configuration utility to configure the ICP DAS's DeviceNet hardware in your PC. By means of this driver, you don't need to have the complex and abstruse technology of the DeviceNet protocol.

✔ NI LabVIEW Software version 7.0 or later
✔ Auto detecting DeviceNet slave devices and DeviceNet I/O monitor
✔ Programmable MAC ID Setting
✔ Provide hardware configuration tool
✔ Support UCMM capable devices
✔ Selectable data rates (baud): 125K, 250K, 500K
✔ Support the Predefined Master/Slave connection set

LabVIEW

CAN-2000D CAN-8224 CAN-8424

Master (PISO-CAN 200)
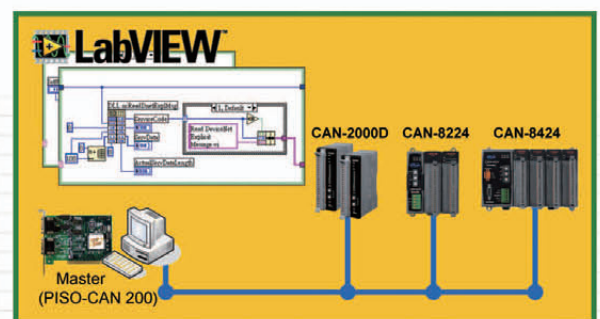
5. J1939 Introduction & Products

J1939 is the vehicle bus standard used for communication and diagnostics among vehicle components, originally by the car and heavy duty truck industry in the United States. Because of the success of applying in vehicles, J1939 has become the accepted industry standard and the vehicle network technology of choice for off-highway machines in applications sucth as construction, material handling, and forestry machines. It is a higher-layer protocol based on Controller Area Network (CAN), which provides serial data communications between microprocessor systems (ECU) in any kind of heavy duty vehicles. The messages exchanged between these units can be data such as vehicle road speed, torque control message from the transmission to the engine, oil temperature, and many more.

✱ J1939 Features

- ✔ Higher-layer protocol based on CAN bus
- ✔ The speed is nearly always 250 kbit/s
- ✔ 29-bit identifier CAN 2.0B
- ✔ Used in heavy-duty vehicles
- ✔ Peer-to-peer and broadcast communication
- ✔ Transport protocols for up to 1785 data bytes
- ✔ Network management
- ✔ Definition of parameter groups
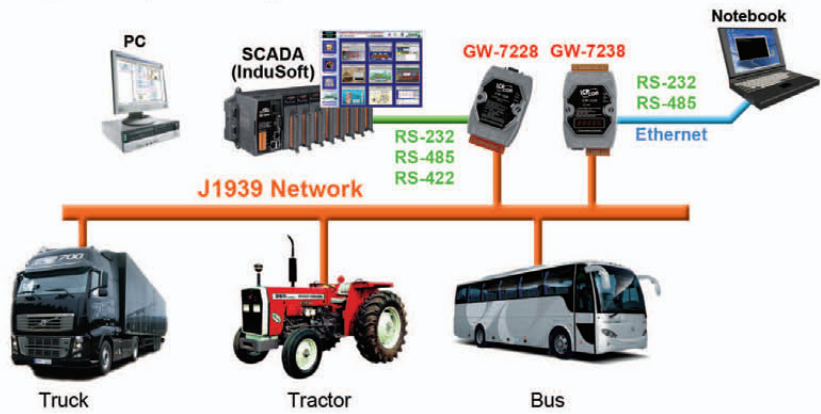
Selection Guide

| Model Name	Description	Page
J1939 Gateway		
GW-7228	J1939 to Modbus RTU Slave Gateway	5-1
GW-7238	J1939 to Modbus TCP Server/RTU Slave Gateway	

J1939 Gateways

J1939 to Modbus RTU Slave Gateway

GW-7228 CR
NEW

GW-7228 is a solution that provides a protocol conversion between J1939 and Modbus RTU. For J1939 network, the GW-7228 supports PDU1, PDU2, broadcast and destination specific type of J1939 messages. From the view of Modbus RTU network, the GW-7228 is a Modbus RTU slave to reply the request from Modbus RTU master.

- ✔ Provide PWR/J1939/MODBUS indication LED
- ✔ Built-in jumper to select 120 Ω terminal resister
- ✔ Watchdog inside
- ✔ Transmission and reception of all types of J1939 messages, including PDU1, PDU2, broadcast and destination specific
- ✔ J1939 Transport Protocol for transmission and reception of large messages (9 - 1785 bytes)
- ✔ Support BAM of Connection Management Message
- ✔ Network addresses management
- ✔ Support RS-232, RS-485 and RS-422 interfaces
- ✔ Support Modbus RTU slave protocol
- ✔ Configurable for Modbus Network ID (1 ~ 250)
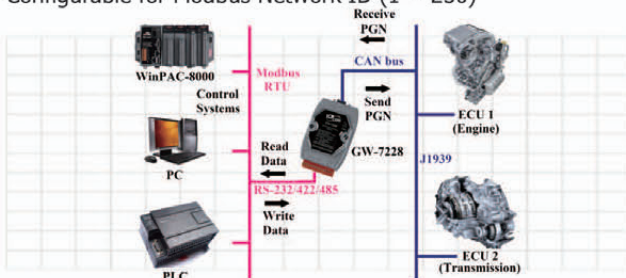
J1939 to Modbus TCP Server/RTU Slave Gateway

GW-7238 CR
Available soon

GW-7238 is a gateway that provides conversion between J1939 and Modbus TCP/RTU protocol. For J1939 network, the GW-7238 supports PDU1, PDU2, broadcast and destination specific type of J1939 messages. For Modbus TCP/RTU network, the GW-7238 is a Modbus TCP server/RTU slave to reply the request from Modbus TCP client/RTU master.

- ✔ Provides PWR/J1939/MODBUS indication LEDs
- ✔ Built-in jumper to select 120 Ω terminal resister
- ✔ Watchdog inside
- ✔ Transmission and reception of all types of J1939 messages, including PDU1, PDU2, broadcast and destination specific
- ✔ J1939 Transport Protocol for transmission and reception of large messages (9 - 1785 bytes)
- ✔ Supports BAM of Connection Management Message
- ✔ Network addresses management
- ✔ Supports RS-232, RS-485 and Ethernet interfaces
- ✔ Supports Modbus TCP server/RTU slave protocol
- ✔ Configurable for Modbus Network ID (1 ~ 250)
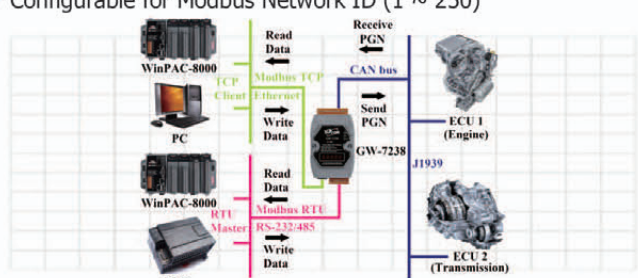
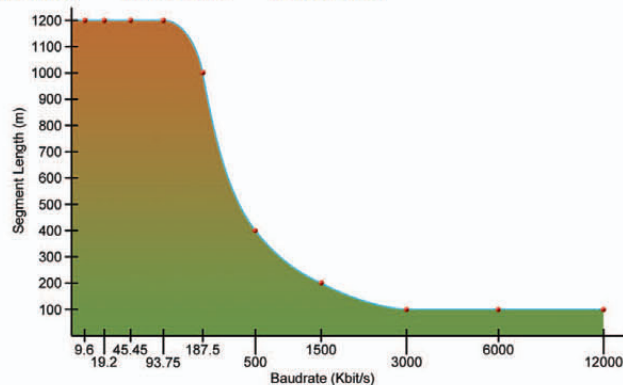# 6. PROFIBUS Introduction & Products

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. ICP DAS provides a lot PROFIBUS DP products and help the user develop PROFIBUS application system easily. Wte have been developing and studying PROFIBUS DP for years. ICP DAS will always secure user's industrial safety and stable automation system as our mission These fieldbus solutions also support multi-drop networking of devices on a single twisted-pair cable providing substantial cost savings in:

    Reduced wiring
    Commissioning and installation
    Plant operations and improved quality
    Maintenance

NETWORK APPLICATION

PROFIBUS DP

I-7550   PROFI-5000

RS-232/RS-422/RS-485

I-7000 Series   RS-422 Device   RS-485 Device   RS-232 Device

❈ 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

Segment Length (m) vs Baudrate (Kbit/s)

Selection Guide

PROFIBUS Introduction & Products

PROFIBUS Converter

PROFIBUS to RS-232/485/422 Converter

I-7550 CR

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 way. With the Hybrid COM 1 design, users can readily choose one type of com port to use. By using this module, users can put their RS-232/422/485 devices into PROFIBUS network very easily.

- ✔ Protocol & Hierarchy: DP-V0 Slave
- ✔ Detect transmission rate (9.6 to 12000 kbps) on PROFIBUS automatically
- ✔ 128 bytes Max. input data length
- ✔ 128 bytes Max. output data length
- ✔ PROFIBUS address 0 ~ 126 set by DIP switch
- ✔ Support several kinds of baud for COM1 from 1.2 ~ 115.2 kbps
- ✔ Network Isolation Protection: 2500 Vrms High Speed iCoupler
- ✔ 3000 V$_{DC}$ isolation protection on PROFIBUS side
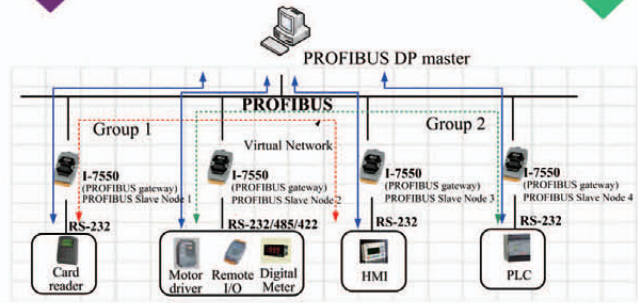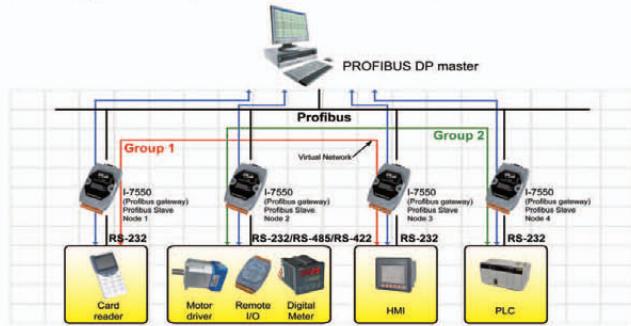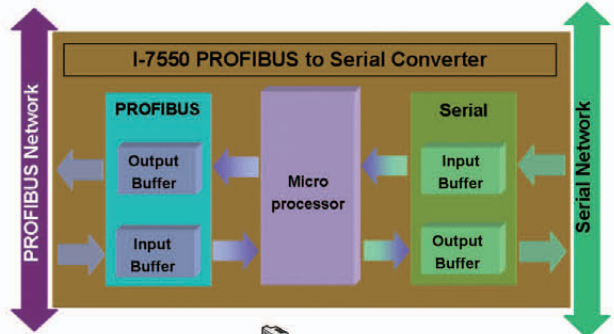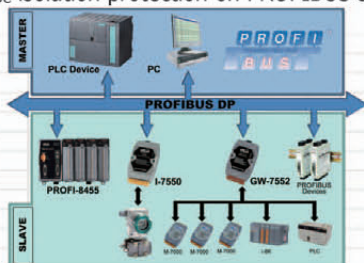

PROFIBUS Gateway

PROFIBUS/Modbus RTU Gateway

GW-7552 CR

GW-7552 Gateway is specially designed for the slave device of PROFIBUS DP protocol. It allows the PROFIBUS master to access the Modbus devices.

- ✔ Protocol & Hierarchy: DP-V0 Slave
- ✔ Detect transmission rate (9.6 to 12000 kbps) on PROFIBUS automatically
- ✔ 128 bytes Max. input data length
- ✔ 131 bytes Max. output data length
- ✔ Support Modbus Master and Modbus Slave both mode
- ✔ Support RTU and ASCII Modbus format
- ✔ PROFIBUS address 0 ~ 126 set by DIP switch
- ✔ Support several kinds of baud for COM1 from 2.4 ~ 115.2 kbps
- ✔ Network Isolation Protection: 2500 Vrms High Speed iCoupler
- ✔ 3000 V$_{DC}$ isolation protection on PROFIBUS side

PROFIBUS/Modbus TCP Gateway

GW-7553 CR

NEW

GW-7553 Gateway is specially designed for the slave device of PROFIBUS DP protocol. It allows the PROFIBUS master to access the Modbus TCP devices.

- ✔ Protocol & Hierarchy: DP-V0 & DP-V1 Slave
- ✔ Detect transmission rate (9.6 to 12000 kbps) on PROFIBUS automatically
- ✔ Support one 10/100 Base-TX Ethernet port
- ✔ Support one RS-232 port (3-wire or 5-wire)
- ✔ 240 bytes Max. input data length
- ✔ 240 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 V$_{DC}$ isolation protection on PROFIBUS side

PROFIBUS Introduction & Products
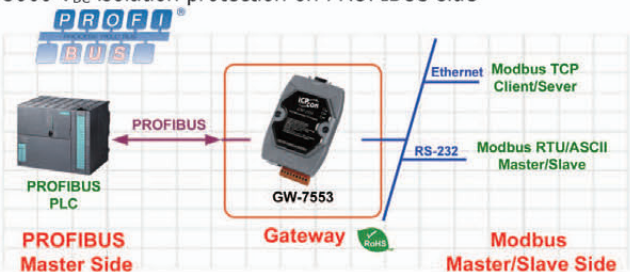
PROFIBUS Remote I/O Module

24 Isolated DO Module

PROFI-5045
NEW

PROFI-5045 is one of the PROFIBUS DP series products produced by ICP DAS. It provides the PROFIBUS DP communication protocol with any DP-Masters. The PROFI-5045 provides ±4KV ESD protection contacting for all terminals (include I/O Terminals and PROFIBUS connector).

✔ Support for PROFIBUS DP-V0 protocol
✔ Detect transmission rate automatically(Max. 12Mbps)
✔ Address 0~99 set by rotary switches
✔ Network Isolation Protection
✔ 3000V$_{DC}$ isolation protection on PROFIBUS side
✔ 4KV ESD Protection (contact for any terminal)
✔ Wide range of power input (DC 10~40V$_{DC}$) and operating temperature (-25°C~+75°C)

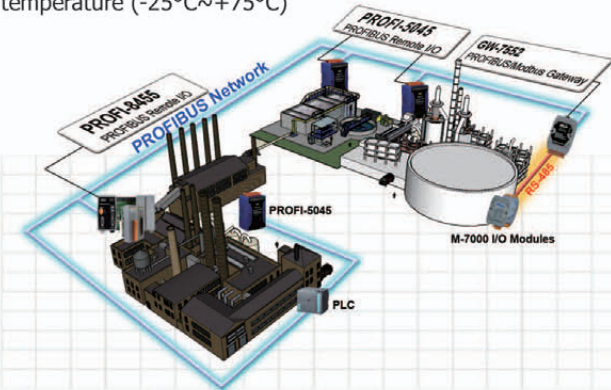### 16 Non-Isolated DI and 8 Non-Isolated DO Module

PROFI-5050
NEW

PROFI-5050 is one of the PROFIBUS DP series products produced by ICP DAS. It provides the PROFIBUS DP communication protocol with any DP-Masters. The PROFI-5050 provides ±4KV ESD protection contacting for all terminals (include I/O Terminals and PROFIBUS connector).

✔ Support for PROFIBUS DP-V0 protocol
✔ Detect transmission rate automatically(Max. 12Mbps)
✔ Address 0~99 set by rotary switches
✔ Network Isolation Protection
✔ 3000V$_{DC}$ isolation protection on PROFIBUS side
✔ 4KV ESD Protection (contact for any terminal)
✔ Wide range of power input (DC 10~40V$_{DC}$) and operating temperature (-25°C~+75°C)

24 Isolated DI Module

PROFI-5051
NEW

PROFI-5051 is one of the PROFIBUS DP series products produced by ICP DAS. It provides the PROFIBUS DP communication protocol with any DP-Masters. The PROFI-5051 provides ±4KV ESD protection contacting for all terminals (include I/O Terminals and PROFIBUS connector).

✔ Support for PROFIBUS DP-V0 protocol
✔ Detect transmission rate automatically(Max. 12Mbps)
✔ Address 0~99 set by rotary switches
✔ Network Isolation Protection
✔ 3000V$_{DC}$ isolation protection on PROFIBUS side
✔ 4KV ESD Protection (contact for any terminal)
✔ Wide range of power input (DC 10~40V$_{DC}$) and operating temperature (-25°C~+75°C)
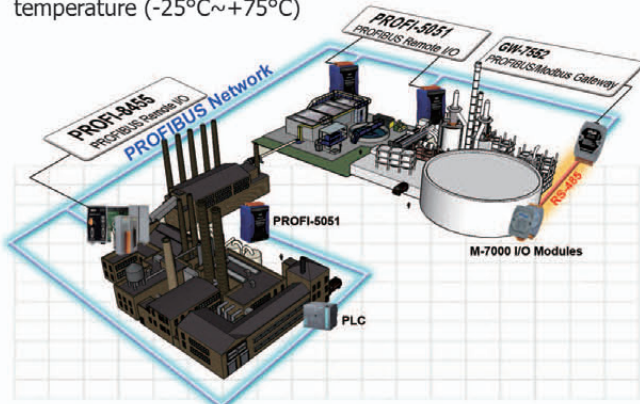

12 Isolated DI Moduel

PROFI-5052
NEW

PROFI-5052 is one of the PROFIBUS DP series products produced by ICP DAS. It provides the PROFIBUS DP communication protocol with any DP-Masters. The PROFI-5052 provides ±4KV ESD protection contacting for all terminals (include I/O Terminals and PROFIBUS connector).

✔ Support for PROFIBUS DP-V0 protocol
✔ Detect transmission rate automatically(Max. 12Mbps)
✔ Address 0~99 set by rotary switches
✔ Network Isolation Protection
✔ 3000V$_{DC}$ isolation protection on PROFIBUS side
✔ 4KV ESD Protection (contact for any terminal)
✔ Wide range of power input (DC 10~40V$_{DC}$) and operating temperature (-25°C~+75°C)

24 Dry Contact Non-Isolated DI Moduel

PROFI-5053
NEW

PROFI-5053 is one of the PROFIBUS DP series products produced by ICP DAS. It provides the PROFIBUS DP communication protocol with any DP-Masters. The PROFI-5053 provides ±4KV ESD protection contacting for all terminals (include I/O Terminals and PROFIBUS connector).

✔ Support for PROFIBUS DP-V0 protocol
✔ Detect transmission rate automatically(Max. 12Mbps)
✔ Address 0~99 set by rotary switches
✔ Network Isolation Protection
✔ 3000V_{DC} isolation protection on PROFIBUS side
✔ 4KV ESD Protection (contact for any terminal)
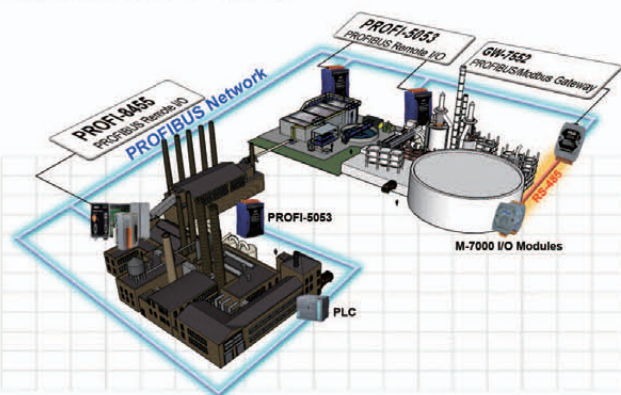✔ Wide range of power input (DC 10~40V_{DC}) and operating temperature (-25°C~+75°C)

8 Isolated DI and 8 Isolated DO Moduel

PROFI-5055
NEW

PROFI-5055 is one of the PROFIBUS DP series products produced by ICP DAS. It provides the PROFIBUS DP communication protocol with any DP-Masters. The PROFI-5055 provides ±4KV ESD protection contacting for all terminals (include I/O Terminals and PROFIBUS connector).

✔ Support for PROFIBUS DP-V0 protocol
✔ Detect transmission rate automatically(Max. 12Mbps)
✔ Address 0~99 set by rotary switches
✔ Network Isolation Protection
✔ 3000V_{DC} isolation protection on PROFIBUS side
✔ 4KV ESD Protection (contact for any terminal)
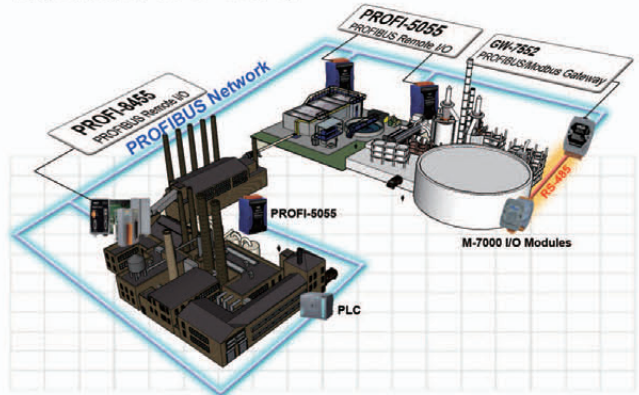✔ Wide range of power input (DC 10~40V_{DC}) and operating temperature (-25°C~+75°C)

8 Isolated DI and 4 Relay Output Module

PROFI-5060
NEW

PROFI-5060 is one of the PROFIBUS DP series products produced by ICP DAS. It provides the PROFIBUS DP communication protocol with any DP-Masters. The PROFI-5060 provides ±4KV ESD protection contacting for all terminals (include I/O Terminals and PROFIBUS connector).

✔ Support for PROFIBUS DP-V0 protocol
✔ Detect transmission rate automatically(Max. 12Mbps)
✔ Address 0~99 set by rotary switches
✔ Network Isolation Protection
✔ 3000V_{DC} isolation protection on PROFIBUS side
✔ 4KV ESD Protection (contact for any terminal)
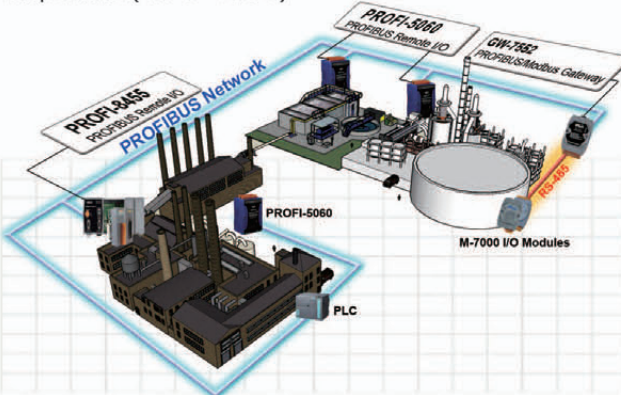✔ Wide range of power input (DC 10~40 V_{DC}) and operating temperature (-25°C~+75°C)

8 Isolated Analog Voltage Input Module

PROFI-5017
Available soon

PROFI-5017 is one of the PROFIBUS DP series products produced by ICP DAS. It provides the PROFIBUS DP communication protocol with any DP-Masters. The PROFI-5017 provides ±4kV ESD protection contacting for all terminals (include I/O Terminals and PROFIBUS connector).

✔ Support for PROFIBUS DP-V0 protocol
✔ Detect transmission rate automatically(Max. 12Mbps)
✔ Support device-related & channel-related diagnosis
✔ Address 0~126 set by rotary switches or SSA telegram
✔ 14-bits resolution & 100ksps AD converter
✔ 3000V_{DC} isolation protection on PROFIBUS
✔ 4kV ESD protection (contact for any terminal)
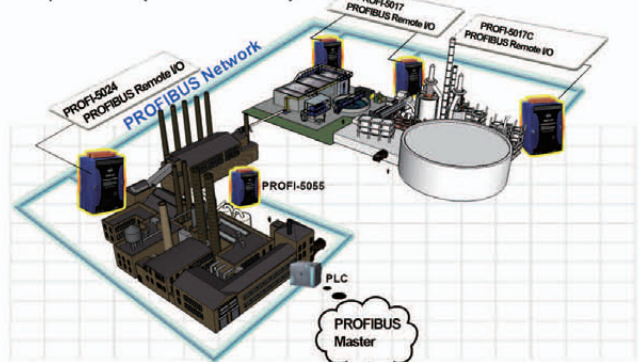✔ Wide range of power input (DC 10~40V_{DC}) and operating temperature (-25°C~+75°C)

PROFIBUS Introduction & Products

PROFIBUS Introduction & Products

8 Isolated Analog Current Input Module

PROFI-5017C
Available soon

PROFI-5017C is specially designed for the slave device of PROFIBUS DP protocol. It supports up to 8-channel isolated analog current input with 2500Vrms field to logic isolation. Users can easily to choose and configure it by using the GSD file in any PROFIBUS Configurator.

✔ Protocol & Hierarchy : DP-V0 Slave
✔ Supports Transmission Rate (kbps) : 9.6, 19.2, 45.45, 93.75, 187.5, 500, 1500, 3000, 6000, 12000
✔ Transmission Rate Setting : detected automatically
✔ Address Setting : 0~126 set by rotary switches or SSA Telegram
✔ Indicators : PWR LED, RUN LED, ERR LED
✔ Network Isolation Protection : High Speed iCoupler
✔ DC Isolation Protection : 3000 V_{DC} on PROFIBUS side
✔ 4KV ESD Protection : Contact for each terminal

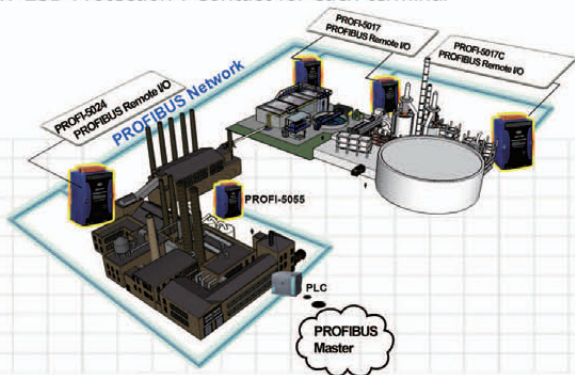## 4 Isolated Analog Voltage & Current Output Module

PROFI-5024
Available soon

PROFI-5024 is specially designed for the slave device of PROFIBUS DP protocol. It supports up to 4-channel isolated analog voltage/current output with 3750Vrms field to logic isolation. Users can easily to choose and configure it by using the GSD file in any PROFIBUS Configurator.

✔ Protocol & Hierarchy : DP-V0 Slave
✔ Supports Transmission Rate (kbps) : 9.6, 19.2, 45.45, 93.75, 187.5, 500, 1500, 3000, 6000, 12000
✔ Transmission Rate Setting : detected automatically
✔ Address Setting : 0~126 set by rotary switches or SSA Telegram
✔ Indicators : PWR LED, RUN LED, ERR LED
✔ Network Isolation Protection : High Speed iCoupler
✔ DC Isolation Protection : 3000 V_{DC} on PROFIBUS side
✔ 4KV ESD Protection : Contact for each terminal
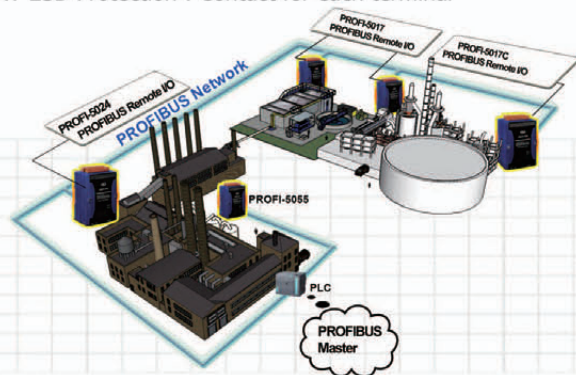
PROFIBUS Remote I/O Unit

PROFIBUS Remote I/O Unit with 1 Expansion Slot

PROFI-8155
NEW

PROFI-8155 Remote I/O Unit is specially designed for the slave device of PROFIBUS DP protocol. It supports up to 1 slot for ICPDAS 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.

✔ Protocol& hierarchy: DP-V0 Slave
✔ Detect transmission rate (9.6 ~ 12000 kbps) automatically
✔ Support all I-8k & I-87k I/O Module
✔ Support Device-Related & Channel-Related Diagnosis
✔ Address 0~126 set by rotary switches or SSA-Telegram
✔ Support Hot-Swap for I-87k High-Profile Modules
✔ Network Isolation Protection
✔ 3000 V_{DC} isolation protection on PROFIBUS side
✔ 4 kV ESD Protection (contacting for any terminal)

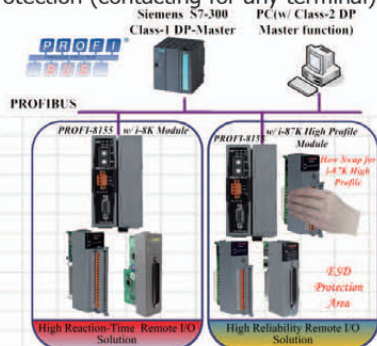### PROFIBUS Remote I/O Unit with 2 Expansion Slots

PROFI-8255
NEW

PROFI-8255 Remote I/O Unit is specially designed for the slave device of PROFIBUS DP protocol. It supports up to 2 slots for ICPDAS 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.

✔ Protocol& hierarchy: DP-V0 Slave
✔ Detect transmission rate (9.6 ~ 12000 kbps) automatically
✔ Support all I-8k & I-87k I/O Module
✔ Support Device-Related & Channel-Related Diagnosis
✔ Address 0~126 set by rotary switches or SSA-Telegram
✔ Support Hot-Swap for I-87k High-Profile Modules
✔ Network Isolation Protection
✔ 3000 V_{DC} isolation protection on PROFIBUS side
✔ 4 kV ESD Protection (contacting for any terminal)

PROFIBUS Remote I/O Unit with 4 Expansion Slots

PROFI-8455
NEW

PROFI-8455 Remote I/O Unit is specially designed for the slave device of PROFIBUS DP protocol. It supports up to 4 slots for ICPDAS 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.

- Protocol& hierarchy: DP-V0 Slave
- Detect transmission rate (9.6 ~ 12000 kbps) automatically
- Support all I-8k & I-87k I/O Module
- Support Device-Related & Channel-Related Diagnosis
- Address 0~126 set by rotary switches or SSA-Telegram
- Support Hot-Swap for I-87k High-Profile Modules
- Network Isolation Protection
- 3000 V$_{DC}$ isolation protection on PROFIBUS side
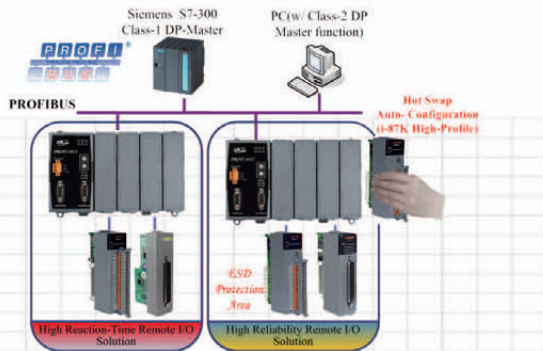- 4 kV ESD Protection (contacting for any terminal)

PROFIBUS Remote I/O Unit with 8 Expansion Slots

PROFI-8855
Available soon

PROFI-8855 Remote I/O Unit is specially designed for the slave device of PROFIBUS DP protocol. It supports up to 8 slots for ICPDAS 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.

- Protocol& hierarchy: DP-V0 Slave
- Detect transmission rate (9.6 ~ 12000 kbps) automatically
- Support all I-8k & I-87k I/O Module
- Support Device-Related & Channel-Related Diagnosis
- Address 0~126 set by rotary switches or SSA-Telegram
- Support Hot-Swap for I-87k High-Profile Modules
- Network Isolation Protection
- 3000 V$_{DC}$ isolation protection on PROFIBUS side
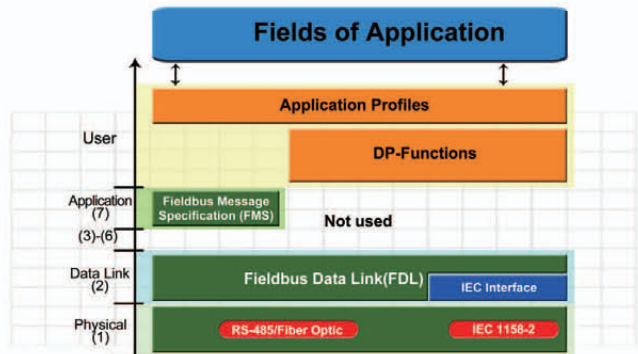- 4 kV ESD Protection (contacting for any terminal)

Accessories

PROFIBUS Connector

CNT-PROFI
NEW

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. The CNT-PROFI connector is used to connect a PROFIBUS node to the PROFIBUS line featuring quick-connect technology, making the stripping of bus conductors superfluous. The connector is quick to install, and has a plastic housing and integrated terminating resistors. Anyway the CNT-PROFI could link a PROFIBUS device to a PROFIBUS line easily and fast.

Features

- Built-in switch to select terminal resistor
- 2 cable entries
- Cable outlet : 90° cable outlet
- Connector : 9-pin, D-Sub male connector
- Baud rate : 9.6kbps ~ 12Mbps
- Operating temperature : -25°C ~ 75°C
- Storage temperature : -30°C ~ 80°C
- Humidity : 10 ~ 90% RH, non-condensing

Hardware Information

Top View

Unit: mm
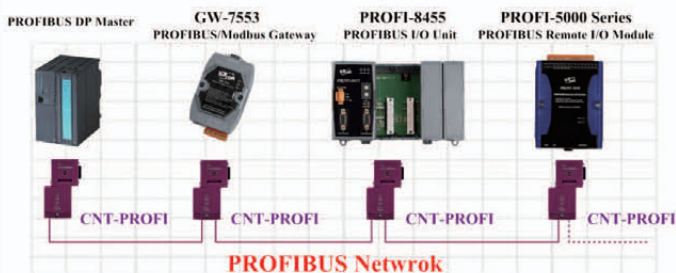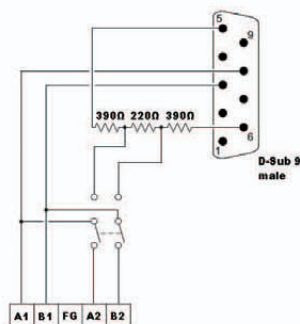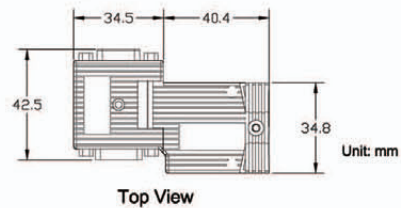
7. HART Introduction & Products

HART Field Communications Protocol extends this 4 ~ 20 mA standard to enhance communication with smart field instruments. The protocol preserves the 4 ~ 20 mA signal and enables two-way digital communications to occur without disturbing the integrity of the 4 ~ 20 mA signal. Unl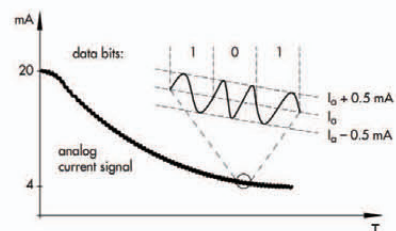ike other communication technologies, the HART protocol can maintain compatibility with existing 4 ~ 20 mA systems with a uniquely backward compatible solution.

Here are two main operational modes of HART instruments: analog/digital mode, and multi-drop mode.

❉ Peer-to-Peer mode

The analog and digital signals can be communicated in this mode. Here the digital signals are overlaid on the 4 ~ 20 mA loop current. Both the 4 ~ 20 mA current and the digital signal are valid output values from the instrument. The polling address of the instrument is set to "0". Only one instrument can be put on each instrument cable signal pair.
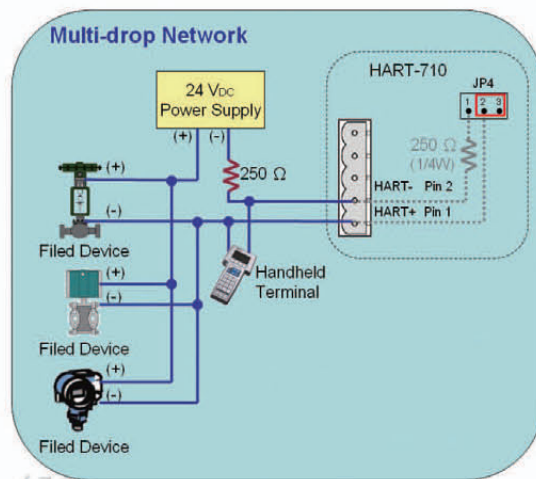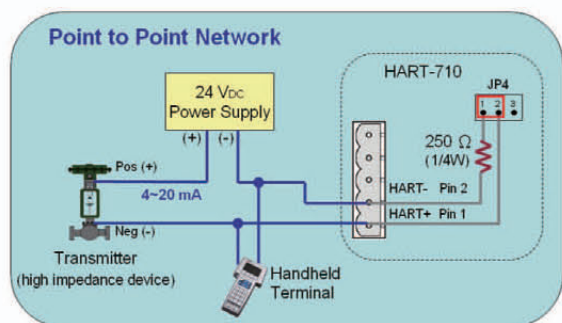
❉ Multi-drop mode (digital)

In this mode, only the digital signals are used. The analog loop current is fixed at 4 mA. In multi-drop mode it is possible to have up to 15 instruments on one signal cable. The polling addresses of the instruments will be in the range 1 ~ 15. Each meter needs to have a unique address.

❉ HART Features

- ✔ Relatively easy to understand and use, the HART protocol provides access to the wealth of additional information (variables, diagnostics, calibration, etc.)
- ✔ HART is a no risk solution for enhanced field communication
- ✔ Compatibility with standard 4 ~ 20 mA wiring
- ✔ Simultaneous transmission of digital data
- ✔ Risk reduction through a highly accurate and robust protocol
- ✔ Increase Plant Availability
- ✔ Reduce Maintenance Costs
- ✔ Improve regulatory compliance

Selection Guide

Model Name	Description	Page
HART Gateway		
HART-710	Modbus to HART Gateway	7-2
HART Module		
I-87H17W	HART module for PAC	7-2
HART Converter		
I-7567	USB to HART Converter	7-3
I-7570	Serial to HART Converter	

HART Introduction & Products

HART Gateway

Modbus to HART Gateway

HART-710 CR

NEW

HART-710 Gateway is specially designed for the master device of HART protocol. It allows the Modbus master device to access the HART slave devices. These HART devices may be a transmitter, an actuator, a current output device and so forth. In addition, we also provide the utility software for users to configure the HART-710. By using this module, users can integrate their HART device into Modbus network easily.

Features

✔ Support HART Short/Long frame
✔ Support HART Burst mode
✔ Allow two HART Masters
✔ Working in point-to-point or multi-drop HART mode
✔ Connecting up to 16 HART modules
✔ Support Modbus RTU and ASCII format
✔ Support Modbus Slave mode
✔ Isolated COM 1: RS-232/422/485
✔ Provide LED indicators
✔ Built-in Watchdog
✔ 4 kV ESD Protection
✔ Mountable on DIN Rail

Utility Features

✔ Read/Write HART device by HART command
✔ Provide diagnostic Information
✔ Read/Write module configuration of the HART-710
✔ Show Modbus address of HART command
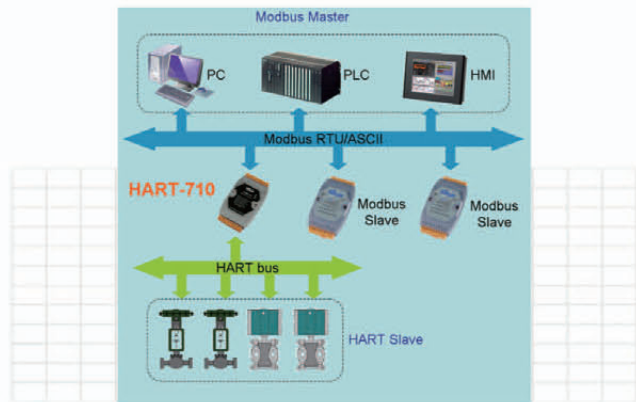
HART Module

HART module for PAC

I-87H17W CR

Available soon

I-87H17W is an 8-ch HART analog input module. It can measures 4~20mA current and acts as a HART master, allowing communication with HART field devices. Users can measure current directly without any external resistor by using built-in resistor. The I-87H17W adopts DCON protocol and the baud rate is up to 115.2Kbps. ICP DAS also provides API library for users to develop their own program by VC, VB, C# or VB.Net environment.

✔ Support HART Short / Long frame
✔ Support 4 ~ 20 mA current input
✔ Allow two HART Masters
✔ Support HART protocol
✔ 2 or 4 wire transmitters
✔ With a built-in resistor
✔ Changeable Baudrate
✔ Open wire detection
✔ 4 kV ESD protection
✔ 2500 V_{DC} intra-module isolation
✔ Built-in Watchdog
✔ RoHS compliance
✔ Support DCON Protocol
✔ Provide API library

HART Introduction & Products
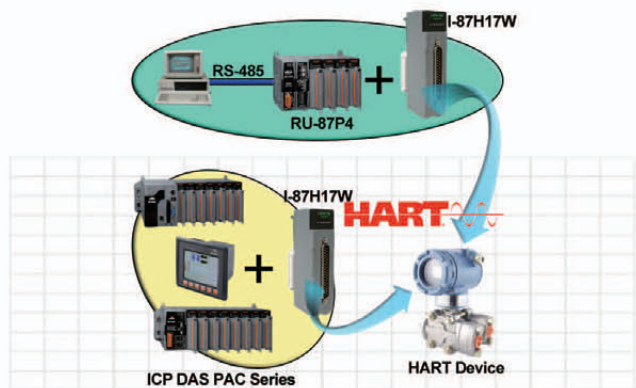
HART Converter

USB to HART Converter

I-7567 CR
NEW

I-7567 is a USB to HART converter specially designed for the master device of HART protocol. It allows users to access the HART slave by using virtual COM-port. These HART slave devices may be a transmitter, an actuator, a current output device and so forth. In addition, we also provide the utility tool for users to configure the I-7567.

Features

- ✔ Support HART Short/Long frame
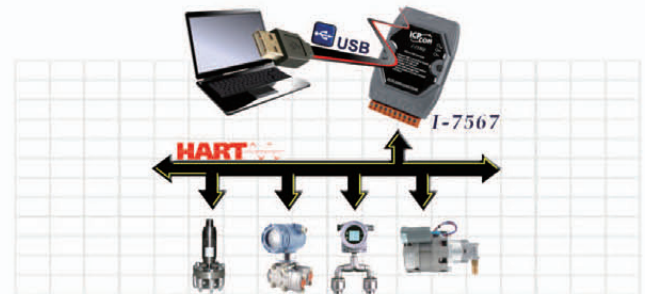- ✔ Allow two HART masters
- ✔ Working in point-to-point or multi-drop HART mode
- ✔ Connecting up to 15 HART modules
- ✔ Provide utility tool for module configuration
- ✔ No external power supply (powered by USB)
- ✔ Support firmware update via USB
- ✔ Provide PWR / Tx / Rx indication LED
- ✔ 4kV ESD Protection
- ✔ Mountable on DIN Rail

Utility Features

- ✔ Easily transmit / receive HART command for testing
- ✔ Provide HART device diagnostic information
- ✔ Provide module parameter configuration

Serial to HART Converter

I-7570 CR
Available soon

I-7570 is a Serial to HART converter specially designed for the master device of HART protocol. By using I-7570, the HART devices can be easily integrated via serial port including RS-232 / 422 / 485 interface with HMI / PLC / PC. These HART slave devices may be a transmitter, an actuator, a current output device and so forth. In addition, we also provide the utility tool for users to configure the I-7570.

Features

- ✔ Support HART Short/Long frame
- ✔ Support HART Burst mode
- ✔ Allow two HART Masters
- ✔ Working in point-to-point or multi-drop HART mode
- ✔ Connecting up to 15 HART modules
- ✔ Provide utility tool for module configuration
- ✔ Isolated COM 1: RS-232/422/485
- ✔ Support firmware update via COM1
- ✔ Provide PWR / RUN / ERR LED indicators
- ✔ Built-in Watchdog
- ✔ Mountable on DIN Rail

Utility Features

- ✔ Easily transmit / receive HART command for testing
- ✔ Provide HART device diagnostic information
- ✔ Provide module parameter configuration

8. EtherNet/IP Introduction & Products

EtherNet/IP is one of the open network standards, like DeviceNet and ControlNet. It is an industrial application layer protocol for industrial automation applications. EtherNet/IP uses all of the protocols of traditional Ethernet including the Transport Control Protocol (TCP), the Internet Protocol (IP) and the media access and signaling technologies. Building on standard Ethernet technologies means that EtherNet/IP will work transparently with all the standard Ethernet devices found today. EtherNet/IP application layer is based on the "Common Industrial Protocol" (CIP) which is used in both DeviceNet and ControlNet. This standard organizes networked devices as a collection of objects. It defines the access, behavior and extensions, which allow vastly different devices to be accessed using a common protocol. Building on these protocols, EtherNet/IP provides a seam-less integrated system from the Industrial floor to the enterprise network.

EtherNet/IP uses all the transport and control protocols of standard Ethernet including the Transport Control Protocol (TCP), the User Datagram Protocol (UDP), the Internet Protocol (IP) and the media access and signaling technologies found in off-the-shelf Ethernet technology. Building on these standard communication technologies means that EtherNet/IP works transparently with all the standard Ethernet devices found in today's market-place.
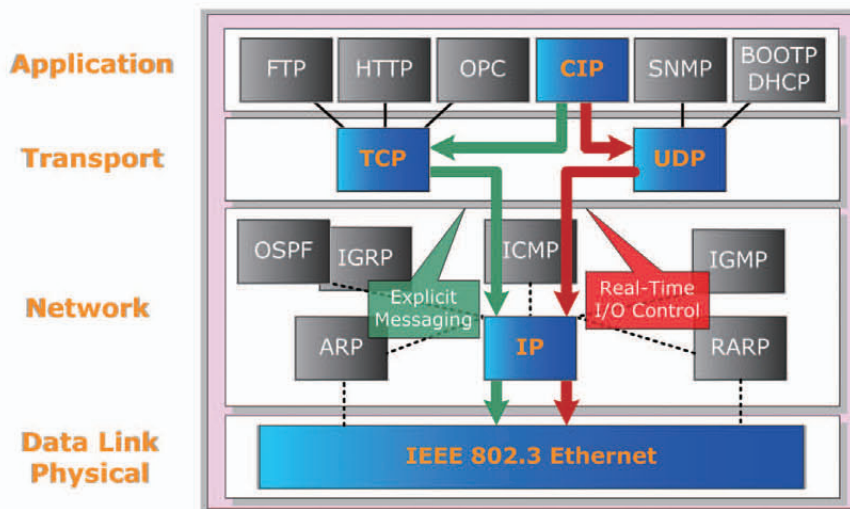
✳ EtherNet/IP Features

- ✔ Offer Producer-Consumer service that enable users to control, configure and collect data
- ✔ Uses exiting IEEE standards for Ethernet physical layer and data link layer
- ✔ Provide flexible installation options leveraging commercially available industrial infrastructure products, including copper, fiber, fiber ring and wireless solutions
- ✔ Provide robust physical layer options for industrial environments and includes the use of sealed RJ-45 and M12-4 D-coding connector.
- ✔ Compatible with general communication standards, including OPC, TCP/IP, HTTP, FTP, SNMP, DHCP
- ✔ Use TCP port number 44818 for explicit messaging and UDP port number 2222 for implicit messaging
- ✔ Transfer of basic I/O data via UDP-based implicit messaging
- ✔ Uploading and downloading of parameters, programs and recipes via TCP
- ✔ Polled, cyclic and change-of-state monitoring via UDP
- ✔ One-to-one (unicast), one-to-many (multicast), and one-to-all (broadcast) communication via TCP

Selection Guide

Model Name	Description	Page
Ethernet/IP Gateway		
GW-7472	EtherNet/IP to Modbus RTU Gateway	8-2

Ethernet/IP Introduction & Products

Ethernet/IP Gateway

EtherNet/IP server to Modbus RTU master Gateway

GW-7472 CR
NEW

GW-7472 (EtherNet/IP server to Modbus RTU master Gateway) converts a network of Modbus RTU Slave devices to a single node of I/O on an EtherNet/IP network. For EtherNet/IP Systems Register data read from Modbus RTU slave nodes is presented to an EtherNet/IP Client device as Input data. Output data transmitted by an EtherNet/IP Client is used to update the register data of Modbus RTU Slave devices. The entire network of Modbus RTU Slave devices appears to the EtherNet/IP Client as a single node of EtherNet/IP slave.

General Features
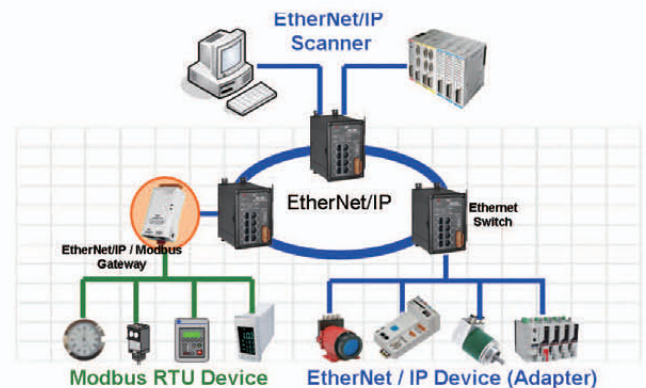
- Powerful 32-bit MCU handles efficient network trafficking
- 10/100 Base-TX Ethernet, RJ-45 x1 (Auto-negotiating, auto MDI/MDIX, LED Indicators)
- Redundant power inputs:
  PoE (IEEE 802.3af, Class 1) and DC jack
- Automatically RS-485 direction control
- Supports ARP, TCP, UDP, ICMP, DHCP, BOOTP and TFTP protocols
- Easy firmware update via Ethernet
- Terminal block connector for easy wiring
- Tiny form-factor and low power consumption
- RoHS compliant with no Halogen
- Made from fire retardant materials (UL94-V0 Level)

EtherNet/IP Features

- Ethernet Protocol: EtherNet/IP Server
- Maximum number of Explicit Messaging connections: 6
- Supported I/O connection methods:
  - ★ Transport and trigger: Exclusive-Owner, Cyclic
  - ★ Original to Target Type: POINT2POINT
  - ★ Target to Original Type: POINT2POINT, MULTICAST
- Device Configuration Option: Custom Software
- Address Configuration: DHCP, Custom Software
- Maximum EtherNet/IP Input/Output data size: 500 bytes
- Maximum Modbus RTU slave data mapped to EtherNet/IP input data: 500 bytes
- Maximum EtherNet/IP output data mapped to Modbus RTU slave devices: 500 bytes

Modbus Features

- Modbus Protocol: Modbus RTU Master
- Maximum support 30 Modbus RTU slave devices
- Supported Modbus RTU Function Codes:
  - ★ 01hex: Read Output Status
  - ★ 02hex: Read Input Status
  - ★ 03hex: Read Multiple Data Registers
  - ★ 04hex: Read Input Registers
  - ★ 0Fhex: Write Multiple Bits
  - ★ 10hex: Write Multiple Data Register
- Maximum data size per Modbus slave device: 240 bytes

EtherNet/IP Scanner

EtherNet/IP

EtherNet/IP / Modbus Gateway

Ethernet Switch

Modbus RTU Device   EtherNet / IP Device (Adapter)

9. BACnet Introduction & Products

BACnet is a communications protocol for building automation and control networks. It is an ASHRAE, ANSI, and ISO standard protocol.

BACnet was designed to allow communication of building automation and control systems for applications such as heating, ventilating, and air-conditioning control, lighting control, access control, and fire detection systems and their associated equipment. The BACnet protocol provides mechanisms for computerized building automation devices to exchange information, regardless of the particular building service they perform.

❊ BACnet Features

- ✔ Designed specifically for building automation control
- ✔ Conformance to ANSI/ASHRAE Standard 135-2008 or ISO 16484-5
- ✔ A completely non-proprietary open communication software standard
- ✔ Support several different physical and link layers
  (BACnet/IP, Ethernet, ARCNET, MS/TP, PTP and LonTalk)
- ✔ All data in a BACnet system is represented in terms of "objects", "properties" and "services"
- ✔ Scalability and choice of compatibility with other systems and vendors

Selection Guide

Model Name	Description	Page
BACnet Gateway		
GW-5492	BACnet/IP Server to Modbus RTU Master Gateway	9-1
GW-5493	BACnet/IP Server to Modbus TCP Client Gateway	

BACnet Gateway

BACnet/IP Server to Modbus RTU Master Gateway

GW-5492 CR
Available soon

GW-5492 is a fully configurable universal Modbus RTU to BACnet/IP gateway. The GW-5492 includes BACnet/IP Server and Modbus RTU Master which is used to make Modbus RTU devices accessible on a BACnet network.

- ✔ Quickly and Cost Effectively integrate networks
- ✔ Provide PWR/Communication Status indication LED
- ✔ Read/Write any standard Modbus registers via BACnet
- ✔ Fully Compliant with BACnet/IP Server and Modbus RTU Master
- ✔ BIBB (BACnet Interoperability Building Blocks) supported:
  DS-RP-B, DS-RPM-B, DS-WP-B, DS-WPM-B, DS-COV-B, DM-DDB-B, DM-DOB-B, DM-DCC-B, DM-TS-B, DM-UTC-B, DM-RD-B
- ✔ BACnet object supported: AI, AO, AV, BI, BO, BV, MSI, MSO, MSV
- ✔ Supports Modbus coils, input register, holding registers
- ✔ Baud rates supported: 2400, 4800, 9600, 19200, 38400, 57600, and 115200 bps
- ✔ No Programming Required
- ✔ Modbus register mapping table configured via web interface

BACnet/IP Server to Modbus TCP Client Gateway

GW-5493 CR
Available soon

GW-5493 is a fully configurable universal Modbus TCP to BACnet/IP gateway. The GW-5493 includes BACnet/IP Server and Modbus TCP client which is used to make Modbus TCP devices accessible on a BACnet network.

- ✔ Quickly and Cost Effectively integrate networks
- ✔ Provide PWR/Communication Status indication LED
- ✔ Read/Write any standard Modbus registers via BACnet
- ✔ Fully Compliant with BACnet/IP Server and Modbus TCP Client
- ✔ BIBB (BACnet Interoperability Building Blocks) supported:
  DS-RP-B, DS-RPM-B, DS-WP-B, DS-WPM-B, DS-COV-B, DM-DDB-B, DM-DOB-B, DM-DCC-B, DM-TS-B, DM-UTC-B, DM-RD-B
- ✔ BACnet object supported: AI, AO, AV, BI, BO, BV, MSI, MSO, MSV
- ✔ Supports Modbus coils, input register, holding registers
- ✔ 10/100 Base-TX Ethernet Controller
- ✔ No Programming Required
- ✔ Modbus register mapping table configured via web interface
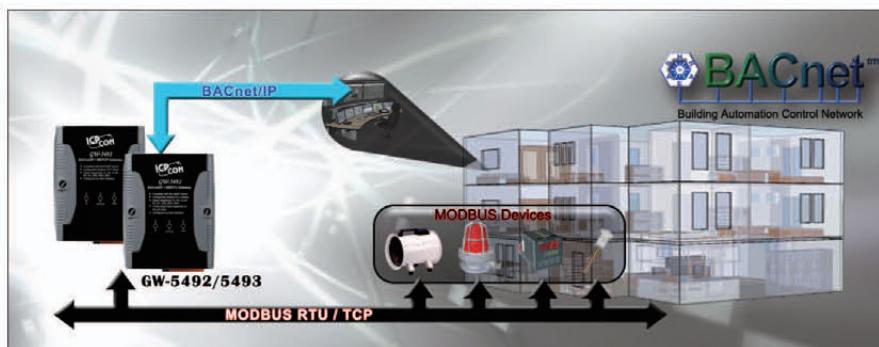
ICP DAS Catalogs

High Reliability Industrial Ethernet Switch Catalog

- Managed Ethernet Switches
- Unmanaged Ethernet Switches
  PoE Ethernet Switches
- Media Converters
- Real-time Redundant Ring Ethernet Switches
- IP67 Waterproof Switches
- Cyber-Ring Ethernet Self-healing Technology

Industrial Communication & Networking Products Catalog

- Multi-port Serial Cards
- Programmable Device Servers (Serial-to-Ethernet)
- Converters, Repeaters and Hubs
- Fieldbus Solutions
- Ethernet Switches

Compact PAC Products Catalog

- XP-8000-Atom Series
- XP-8000 Series
- WP-8000 Series
- LP-8000 Series
- iP-8000 Series
- ViewPAC Series
- MotionPAC Series
- I/O Expansion Units

Industrial CAN Bus Products Catalog

- CAN bus series
- CANopen series
- DeviceNet series
- J1939 series

Industrial Remote I/O Products Catalog

- RS-485 Remote I/O Modules
- Ethernet Remote I/O Modules
- FRnet I/O Modules
- CAN bus Remote I/O Modules
- PROFIBUS Remote I/O Modules

Industrial Wireless Communication Products Catalog

- Industrial Wireless series
- DSSS RF modems
- 2G/3G mini-PAC/Modules/Modems
- ZigBee converters & I/O modules
- GPS solutions

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