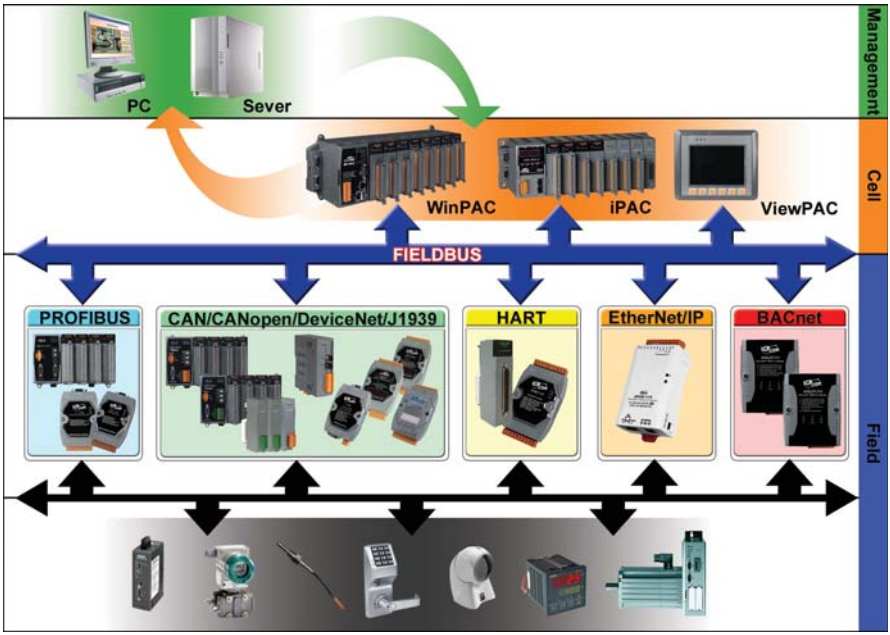
Fieldbus Solutions

5

5.1. Overview

Fieldbus is an industrial network system for real-time distributed control. It is a way to connect instruments in a manufacturing plant. Fieldbus works on a network structure which typically allows daisy-chain, star, ring, branch, and tree network topologies. Fieldbus reduces both the length and the number of cables required. Fieldbus has many major advantages to all applications of automation. The technology of fieldbus is mature and well accepted in various fields in markets. ICP DAS has focused on these fieldbus products for several years and offers various fieldbus solutions in different industrial applications, covering the entire scope of process and manufacturing automation: CAN bus, CANopen, DeviceNet, J1939, PROFIBUS, HART, EtherNet/IP and BACnet applications



ICP DAS's Fieldbus Development Services group has been involved in the design and development of industrial Fieldbus and industrial Ethernet products for our customers for several years. We have the expertise to bring these bring these fieldbus products to your system. As the members of the CiA, ODVA and PI, we have the various latest Fieldbus and industrial Ethernet development tool and understand the details of all the steps required to bring the products to your need.

Solutions for Fieldbus and industrial Ethernet

In order to solve various communication problems in different Fieldbus and industrial Ethernet applications, ICP DAS provides converters, gateways, PC based, and PAC based solutions of Fieldbus and industrial Ethernet for users. Users can choose corresponding solutions depending on various field applications.


PC-based solutions


PAC solutions


Converter solutions


Gateway solutions

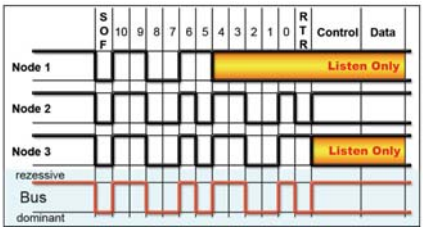
5.2. CAN bus Introduction & Products

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 process 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



Selection Guide

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CAN bus Converters

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 Fiber Converter

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.

I-2532 CR

- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 500 kbps
- 2500 V_{rms} 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
- Configure CAN Baud by rotary switch

CAN bus to Fiber Bridge

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.

NEW

I-2533 CR

- 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 V_{rms} 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

CAN bus Isolated Repeater

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.

I-7531 CR

- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 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
- 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 is a CAN bridge to coupling different segments which can be different baud rates. It also can isolate the electronic disturances between both sides. That can protect the nodes of one side from another.

I-7532 CR

- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 V_{rms} photo couple isolation on the CAN side
- Jumper for 120 Ω terminator resistor of CAN bus
- Extern 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

4-port CAN bus Switch

The I-2534 is a local CAN switch used to establish a connection between for 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.

Available soon

I-2534 CR

- 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: 10 k, 20 k, 50 k, 125 k, 250 k, 500 k, 800 k, 1 M bps
- Supports all CAN application layer protocols based on ISO 11898-2 standard
- Message filter of each CAN port is configurable
- Jumper 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}
- Operation Tempature range -20 °C ~ +80 °C
- Humidity range 0 ~ 95% RH, non-condensing

CAN bus to RS-232 Converter

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.

I-7530 CR

- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 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 RS-232/RS-485/RS-422 Converter

Available soon
I-7530A-MR CR

The I-7530A-MR is a kind of CAN bus to RS-232/485/422 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 5 kbps to 1 Mbps or user-defined baud rate
- Support CAN bus acceptance filter configuration
- Support firmware update via UART
- Provide utility tool for users module setting and CAN bus communication testing conveniently
- Built-in jumper to select 120 ohm terminal resister
- Power, data flow and error indicator for CAN and UART
- Hardware Watchdog design
- Convert CAN message to specific ASCII command string
- Convert specific ASCII command string to CAN messages
- Provide pair-connection communication between the RS-232/485/422 devices via CAN bus
- Provide Modbus RTU command for Modbus master device to access CAN messages.

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 to 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 channels
- 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

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 to 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 to Wi-Fi Converter

Available soon
I-7540D-WF

The 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 802.11a/b/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: 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)

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 to 1 Mbps
- 2500 V_{rms} 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

NEW
I-7565-H1 CR

I-7565-H1 is a cost-efficient device for coupling one CAN channel to USB interface. With its powerful 32-bit microcontroller, transmission and reception processes can be controlled loss-free.
OS Support: Window 98/2K/XP/Vista, Linux

- Fully compatible with the ISO 11898-2 standard
- 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 to 1 Mbps
- Built-in jumper for 120 Ω terminal resister of CAN bus
- 2500 V_{rms} 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

NEW
I-7565-H2 CR

I-7565-H2 is a cost-efficient device for coupling two CAN channels to USB interface. With its powerful 32-bit microcontroller, transmission and reception processes can be controlled loss-free.
OS Support: Window 98/2K/XP/Vista, Linux

- Fully compatible with the ISO 11898-2 standard
- 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 to 1 Mbps
- Built-in jumper for 120 Ω terminal resister of CAN bus
- 2500 V_{rms} 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 V_{rms} 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
- Built-in self-tuner ASIC controller on RS-485 port
- 7-segment LED display
- Built-in ICP DAS's MiniOS7
- Support the CAN bus instead of the X-bus, so it can not be add-on any 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.

- Embedded MiniOS7, anti-virus
- Supports a variety of TCP/IP features, including TCP, UDP, IP, ICMP, ARP
- 10/100 Base-T Ethernet
- Support for Virtual COM configuration
- 1000 V_{DC} 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
- Built-in self-tuner ASIC controller on RS-485 port
- 7-segment LED display

Intelligent CAN bus Modules

Standalone CAN Interface Expansion Module

NEW
I-8120W CR

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 to 1 Mbps
- 2500 V_{rms} photo couple isolation on the CAN side
- DIP switch for 120 Ω terminator resistor of CAN bus
- Watchdog inside
- 3 kV galvanic isolation
- One CAN channel expansion for WinPAC-8000, XPAC-8000, and ViewPAC series PACs
- Provide C/C++ function libraries and demos
- 80 MHz 186 CPU inside
- 8 K DPRAM inside
- Parallel bus communication with main unit

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 to 1 Mbps
- 2500 V_{rms} photo couple isolation on the CAN side
- DIP switch for 120 Ω terminator resistor of CAN bus
- Watchdog inside
- 3 kV galvanic isolation
- One CAN channel expansion for WinPAC-8000, LinPAC-8000, XPAC-8000, and ViewPAC series PACs
- Provide C/C++ function libraries and demos
- 80 MHz 186 CPU inside
- Serial bus communication with main unit
- Allow user-designed firmware

CAN bus Communication Boards

Intelligent CAN Communication Board

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

PISO-CM100U-D CR
PISO-CM100U-T CR

- Universal PCI card, supports both 5 V and 3.3 V PCI bus
- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 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
- 2/4 independent CAN ports
- 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

The 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

NEW
PCM-CAN100-D CR

- 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

The 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

NEW
PCM-CAN200 CR

- 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 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

NEW
PCM-CAN200P CR

- 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 to 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

PCI Express CAN Communication Board

The 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

NEW
PEX-CAN200i-D CR
PEX-CAN200i-T CR

- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 V_{rms} 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 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

PISO-CAN200U-D CR
PISO-CAN200U-T CR

- Universal PCI card, supports both 5 V and 3.3 V PCI bus.
- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 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
- 2 independent CAN channels
- Direct memory mapping to the CAN controller
- Provide VB, VC++, Delphi, Borland C++ builder demos
- Support LabVIEW and DASYLab drivers

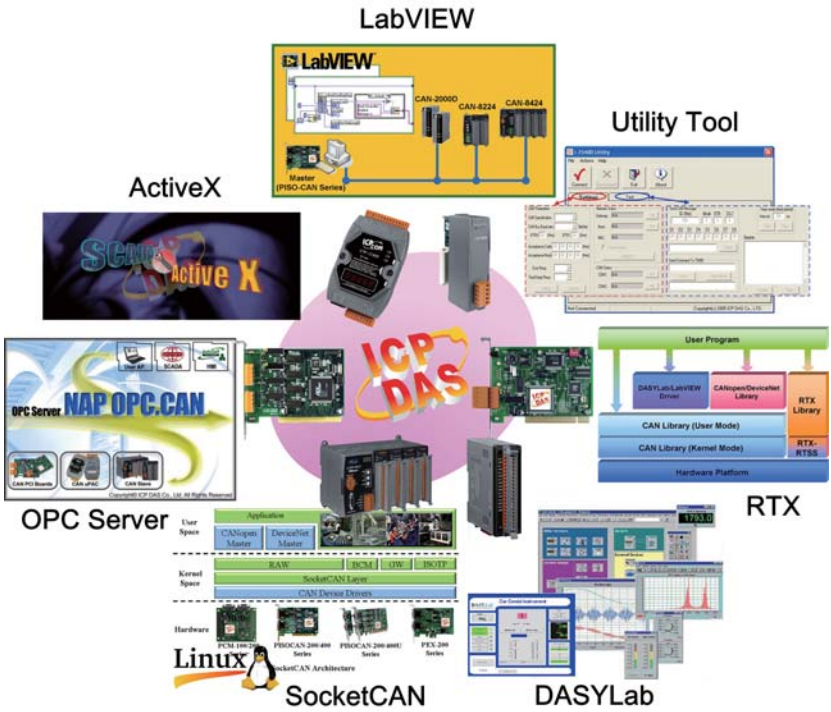
Universal PCI CAN Communication Board

PISO-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

PISO-CAN400U-D CR
PISO-CAN400U-T CR

- Universal PCI card, supports both 5 V and 3.3 V PCI bus.
- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 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

Software Support

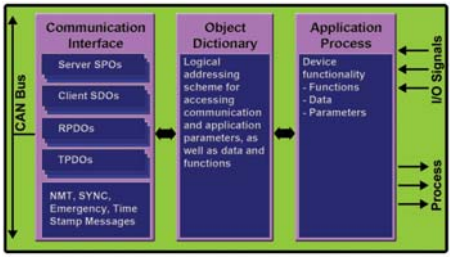


5.3. CANopen Introduction & Products

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 mechanism



Selection Guide

Model Name	Description	Page
CANopen Converter and Gateways		
I-7565-CPM	USB to 1-port CANopen Master Converter	5-3-2
I-7231D	CANopen Slave/DCON Master Gateway	
I-7232D	CANopen Slave/Modbus RTU Master Gateway	
GW-7433D	CANopen Master/Modbus TCP&RTU Slave Gateway	
Intelligent CANopen Communication Modules (For ViewPAC, WinPAC, XPAC,...)		
I-87123	Intelligent 1-port CANopen Master Communication Module with serial bus	5-3-2
I-8123W	High Performance Intelligent 1-port CANopen Master Communication Module with Parallel bus	
Intelligent CANopen Communication Boards		
PISO-CPM100U-D	Intelligent 1-port CANopen Master Universal PCI interface Board	5-3-3
PISO-CPM100U-T		
PISO-CPS100U-D	Intelligent 1-port CANopen Slave Universal PCI interface Board	
PISO-CPS100U-T		
PCM-CAN100-D	1-port CAN bus PCI-104 Board with CANopen Master Library	
PCM-CAN200	2-port CAN bus PCI-104 Board with CANopen Master Library	
PCM-CAN200P	2-port CAN bus PC-104+ Board with CANopen Master Library	
PEX-CAN200i-D	2-port CAN bus PCI Express x 1 Interface Board with CANopen Master Library	
PEX-CAN200i-T		
PISO-CAN200U-D	2-port CAN bus Universal PCI Interface Board with CANopen Master Library	5-3-4
PISO-CAN200U-T		
PISO-CAN400U-D	4-port CAN bus Universal PCI Interface Board with CANopen Master Library	
PISO-CAN400U-T		

Note: The detail about CANopen remote I/O modules, please refer to the website:
http://www.icpdas.com/products/Remote_IO/can_bus/canopen_series.htm

CANopen Converter and Gateways

USB / CANopen Master Converter

NEW
I-7565-CPM CR

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: DS301, version 4.02
- Baud Rate: 10 k, 20 k, 50 k, 125 k, 250 k, 500 k, 800 k, 1 Mbps
- NMT error control support Node Guarding protocol
- SYNC producer 1 ms ~ 65535 ms
- Support dynamic PDO/SDO segment protocol/EDS file
- Slave Node: 127 nodes max.
- Support Auto-scan slave device function
- Support on-line adding and removing devices
- Support save and load command
- Status LED: RUN, MS, NS
- Free utility to configure I-7565-CPM and update firmware
- Windows 2000/XP drivers supported

CANopen Slave / DCON Master Gateway

I-7231D CR

By using I-7231D to convert the electric signals and messages from DCON to CANopen protocol, the DCON I/O modules can be upgraded to CANopen system to secure high reliability and stability.

- CANopen Version: DS-301 v4.02
- Device Profile: DSP-401 v2.01
- Error Control: Node Guarding protocol
- Emergency Message: Yes
- 2500 V_{rms} 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
- Device Profile: DSP-401 v2.01
- Error Control: Node Guarding protocol
- Emergency Message: Yes
- 2500 V_{rms} 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

NEW
GW-7433D CR

GW-7433D is a CANopen master device. It supports PDO and SDO functions to communicate with slave devices. From the view of Modbus TCP & RTU network, GW-7433D plays a Modbus TCP server or Modbus RTU slave role to receive/response the commands from Modbus TCP client or Modbus RTU master protocols.

- CANopen Version: DS-301 v4.02
- Device Profile: DSP-401 v2.01
- Error Control: Node Guarding protocol
- Emergency Message: Yes
- 2500 V_{rms} 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

Intelligent CANopen Communication Modules

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
- Watchdog inside
- NMT: Master
- PDO: Event-triggered, RTR, cyclic, acyclic SYNC and dynamic PDO Mapping
- One CANopen master interface expansion for WinPAC-8000, LinPAC-8000, XPAC-8000, and ViewPAC series PACs
- Provide C/C++ function libraries and demos
- Serial bus communication
- 3 kV galvanic isolation

Standalone CANopen Master Expansion Module

NEW
I-8123W CR

The I-8123W is a high price/performance CANopen master which follows CiA CANopen specification DS-301 V4.02. The inside CPU can process the CANopen protocol. With ICP DAS PACs, it can be generally applied in the industrial automation, building automation, vehicle, and embedded control network.

- 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

Intelligent CANopen Communication Boards

Intelligent 1-port CANopen Master Board

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

PISO-CPM100U-D CR
PISO-CPM100U-T CR

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

Intelligent 1-port CANopen Slave Board

PISO-CPS100U is an especially programmable CANopen Slave board. It provides a universal PCI interface and one CAN communication port. It follows the CANopen specification DS-301 and DSP-401. With the built-in 80186, 80 MHz CPU, this card can be applied in high transmission applications.
OS Support: Windows 2K/XP/Vista

Available soon
PISO-CPS100U-D CR
PISO-CPS100U-T CR

- Universal PCI card, supports both 5 V and 3.3 V PCI bus
- CPU: 80186, 80 MHz
- Built-in Dual-watchdog protection
- CANopen Version: DS301, version 4.02
- CANopen profile: DSP401, version 2.01
- Baud Rate (bps): 10 k, 20 k, 50 k, 125 k, 250 k, 500 k, 800 k, 1 Mbps
- NMT Error Control: Node Guarding protocol & Heartbeat protocol
- SYNC consumer
- Support dynamic PDO.
- Support SDO segment protocol
- Programmable 512 bytes input data and 512 bytes output data
- Support Save and Load command
- Status LED: RUN, ERR
- Free utility to configure PISO-CPS100U and update firmware
- Produce EDS file dynamically
- Windows 2000/XP drivers supported

PCI-104 CAN Communication Board

The PCM-CAN100 is a CAN solution with PCI-104 interface. It complies with CAN 2.0A and CAN 2.0B specification. The PCM-CAN100 provides one CAN port and one bypass CAN port. It provides CANopen lib for users to develop CANopen applications easily.
OS Support:
Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

NEW
PCM-CAN100-D CR

- 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 Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

PCI-104 CAN Communication Board

The PCM-CAN200 is a CAN solution with PCI-104 interface. It complies with CAN 2.0A and CAN 2.0B specification. The PCM-CAN200 provides two CAN ports. It provides CANopen lib for users to develop CANopen applications easily.
OS Support:
Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

NEW
PCM-CAN200 CR

- 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 Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

PC-104+ CAN Communication Board

PCM-CAN200P has 2 independent CAN ports with 9-Pin D-Sub connector compatible PC-104+ specification. It provides CANopen master lib for users to develop CANopen applications easily.
OS Support:
Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

NEW
PCM-CAN200P CR

- 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 to 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 for Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

PCI Express CAN Communication Board

The 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. It provides CANopen master lib for users to develop CANopen applications easily.
OS Support:
Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

NEW
PEX-CAN200i-D CR
PEX-CAN200i-T CR

- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 V_{rms} 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

Universal PCI CAN Communication Board

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. It provides CANopen master lib for users to develop CANopen applications easily.
OS Support:
Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

PISO-CAN200U-D CR
PISO-CAN200U-T CR

- Universal PCI card, supports both 5 V and 3.3 V PCI bus.
- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 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
- 2 independent CAN channels
- Direct memory mapping to the CAN controller
- Provide VB, VC++, Delphi, Borland C++ builder demos

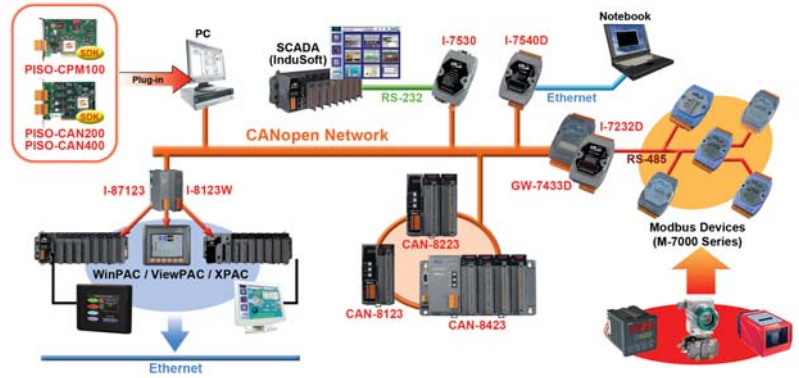
Universal PCI CAN Communication Board

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. It provides CANopen master lib for users to develop CANopen applications easily.
OS Support:
Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

PISO-CAN400U-D CR
PISO-CAN400U-T CR

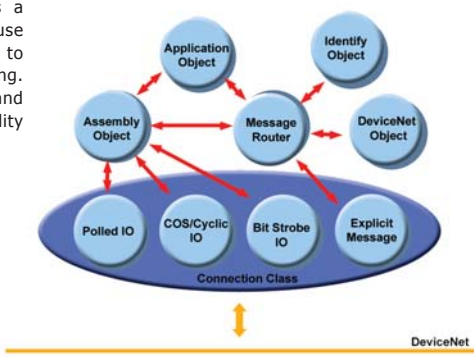
- Universal PCI card, supports both 5 V and 3.3 V PCI bus.
- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 V_{rms} photo-couple isolation on the CAN side
- Built-in jumper for 120 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

Applications



5.4. 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 Converter and Gateways		
I-7565-DNM	USB to 1-port DeviceNet Master Converter	5-4-2
I-7241D	DeviceNet Slave/DCON Master Gateway	
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	
Intelligent DeviceNet Modules (For ViewPAC, WinPAC, XPAC,...)		
I-87124	Intelligent 1-port DeviceNet Master Communication Module with Serial bus	5-4-3
I-8124W	High Performance Intelligent 1-port DeviceNet Master Communication Module with Parallel bus	
Intelligent DeviceNet Communication Boards		
PISO-DNM100U-D	Intelligent 1-port DeviceNet Master Universal PCI interface Board	5-4-3
PISO-DNM100U-T		
PISO-DNS100U-D	Intelligent 1-port DeviceNet Slave Universal PCI interface Board	
PISO-DNS100U-T		
PCM-CAN100-D	1-port CAN bus PCI-104 Board with DeviceNet Master Library	
PCM-CAN200	2-port CAN bus PCI-104 Board with DeviceNet Master Library	
PCM-CAN200P	2-port CAN bus PC-104+ Board with DeviceNet Master Library	5-4-4
PEX-CAN200i-D	2-port CAN bus PCI Express x 1 Interface Board with DeviceNet Master Library	
PEX-CAN200i-T		
PISO-CAN200U-D	2-port CAN bus Universal PCI Interface Board with DeviceNet Master Library	
PISO-CAN200U-T		
PISO-CAN400U-D	4-port CAN bus Universal PCI Interface Board with DeviceNet Master Library	
PISO-CAN400U-T		

Note: The detail about DeviceNet remote I/O modules, please refer to the website:
http://www.icpdas.com/products/Remote_IO/can_bus/devicenet_series.htm

DeviceNet Converter and Gateways

USB/DeviceNet Master Converter

NEW
I-7565-DNM CR

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 (Group2 Only Server)
- 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
- Provide on-line adding device into and removing device from network
- Support auto-scan slave device function
- Auto-reconnect when the connection is broken
- Provide C/C++ function libraries and demos
- 3 kV galvanic isolation

DeviceNet 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
- Product EDS file dynamically by utility
- Support max. 15 I-7000/I-87K I/O series modules
- MAC ID & Baud: Configuration by utility or DeviceNet messages
- 1 kV galvanic isolation

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
- Allow to configure Explicit Message by using Modbus RTU protocol
- Product EDS file dynamically by utility
- Support max 10 Modbus RTU series modules
- 1 kV galvanic isolation

DeviceNet Slave/Modbus TCP & RTU Master Gateway

NEW
GW-7243D CR

The 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
- User can select the Modbus RTU/ASCII protocol for each COM port
- 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
- Maximum support 2048 channels DI, 2048 channels DO, 1024 channels AI and 1024 channels AO for each Modbus TCP device

DeviceNet Master/Modbus TCP & RTU Slave Gateway

NEW
GW-7434D CR

The 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
- Supports on-line adding device into and removing device from network
- Converts single Modbus TCP to multi Modbus RTU devices, setting by Utility
- Supports VxComm technique for every COM ports of controllers, setting by Utility
- Supports Modbus RTU to DeviceNet master, setting by Utility
- Allows multi-client access simultaneously

Intelligent DeviceNet Communication Modules

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 K
- 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

Standalone DeviceNet Master Expansion Module

NEW

I-8124W CR

The I-8124W is a CPU-inside module, and provides an economic DeviceNet master solution of DeviceNet applications. It supports Group 2 and UCMM functions simultaneously. By means of the ICP DAS PACs, it is able to be applied in the industrial automation, building automation, vehicle, and embedded control network.

- 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

Intelligent DeviceNet Communication Boards

Intelligent 1-port DeviceNet Master Board

NEW

PISO-DNM100U-D CR
PISO-DNM100U-T CR

PISO-DNM100U has completed DeviceNet master function according to DeviceNet Group 2 only server. With the built-in 80186, 80 MHz CPU, this card can be applied in high transmission DeviceNet applications.
OS Support: Windwos 2K/XP/Vista

- Universal PCI card, supports both 5 V and 3.3 V PCI bus
- Comply with DeviceNet specification volume I, release 2.0 & volume II, release 2.0
- Support Predefined Master/Slave Connection Set (Group 2 only server)
- 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
- Provide on-line adding device into and removing device from network
- Support auto-scan slave device function
- Auto-reconnect when the connection is broken
- 3 kV galvanic isolation 80186, 80 MHz CPU inside

Intelligent 1-port DeviceNet Slave Board

NEW

PISO-DNS100U-D CR
PISO-DNS100U-T CR

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

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

PCI-104 CAN Communication Board

NEW

PCM-CAN100-D CR

The PCM-CAN100 is a CAN solution with PCI-104 interface. It complies with CAN 2.0A and CAN 2.0B specification. The PCM-CAN100 provides one CAN port and one bypass CAN port. It provides CANopen lib for users to develop CANopen applications easily.
OS Support:
Win2K/XP/Vista/7, 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
- upport 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 Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

PCI-104 CAN Communication Board

NEW

PCM-CAN200 CR

The PCM-CAN200 is a CAN solution with PCI-104 interface. It complies with CAN 2.0A and CAN 2.0B specification. The PCM-CAN200 provides two CAN ports. It provides CANopen lib for users to develop CANopen applications easily.
OS Support:
Win2K/XP/Vista/7, 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 Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

PC-104+ CAN Communication Board

PCM-CAN200P has 2 independent CAN ports with 9-Pin D-Sub connector compatible PC-104+ specification. It provides DeviceNet master lib for users to develop DeviceNet applications easily.
OS Support:
Win2K/XP/Vista/7, Linux 2.6.3 1 ~ 2.6.34

NEW
PCM-CAN200P CR

- 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 to 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 for Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

PCI Express CAN Communication Board

The 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. It provides DeviceNet master lib for users to develop DeviceNet applications easily.
OS Support:
Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

NEW
PEX-CAN200i-D CR
PEX-CAN200i-T CR

- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 V_{rms} 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

Universal PCI CAN Communication Board

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. It provides DeviceNet master lib for users to develop DeviceNet applications easily.
OS Support:
Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

PISO-CAN200U-D CR
PISO-CAN200U-T CR

- Universal PCI card, supports both 5 V and 3.3 V PCI bus.
- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 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
- 2 independent CAN channels
- Direct memory mapping to the CAN controller
- Provide VB, VC++, Delphi, Borland C++ builder demos

Universal PCI CAN Communication Board

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. It provides DeviceNet master lib for users to develop DeviceNet applications easily.
OS Support:
Win2K/XP/Vista/7, Linux 2.6.31 ~ 2.6.34

PISO-CAN400U-D CR
PISO-CAN400U-T CR

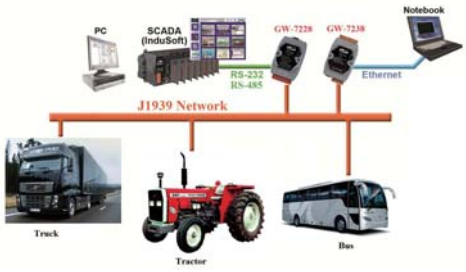
- Universal PCI card, supports both 5 V and 3.3 V PCI bus.
- Compatible with CAN specification 2.0 parts A and B
- Fully compatible with the ISO 11898-2 standard
- Support several kinds of baud rate from 10 kbps to 1 Mbps
- 2500 V_{rms} photo-couple isolation on the CAN side
- Built-in jumper for 120 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

5.5. 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 such 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 Gateways		
GW-7228	J1939 to Modbus RTU Slave Gateway	5-5-1
GW-7238	J1939 to Modbus TCP Server/RTU Slave Gateway	

J1939 Gateways

J1939 to Modbus RTU Slave Gateway

NEW
GW-7228 CR

The 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

Available soon
GW-7238 CR

The 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.

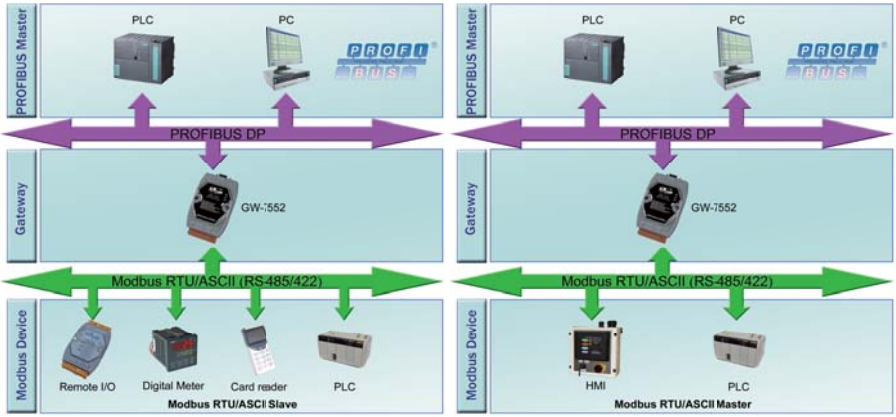
- Provides PWR/J1939/MODBUS indication LEDs
- Built-in jumper to select 120 Ω terminal resister
- Watchdog inside
- Transmission and reception of all types of J1939 messages, including PDU1, PDU2, broadcast and destination specific.
- J1939 Transport Protocol for transmission and reception of large messages (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).
- Allows 5 Modbus/TCP clients' simultaneous accesses.

5.6. 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. We 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

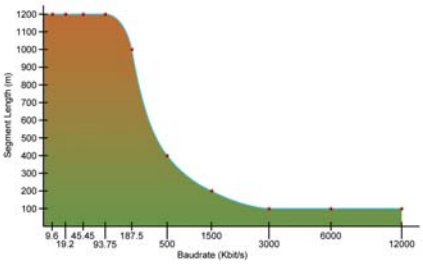
These fieldbus solutions also support multi-drop networking of devices on a single twisted-pair cable providing substantial cost savings in:

- Reduced wiring
- Commissioning and installation
- Plant operations and improved quality
- Maintenance



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



Selection Guide

Model Name	Description	Page
PROFIBUS Converters		
I-7550	PROFIBUS to RS-232/485/422 Converter	5-6-2
PROFIBUS Gateways		
GW-7552	PROFIBUS/Modbus RTU Gateway	5-6-2
GW-7553	PROFIBUS/Modbus TCP Gateway	

Note: The detail about PROFIBUS remote I/O modules, please refer to the website:
http://www.icpdas.com/products/Industrial/profibus/profi_intro.htm

PROFIBUS Converters

PROFIBUS to RS-232/485/422 Converter

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.

I-7550 CR

- 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 to 115.2 kbps
- Network Isolation Protection: High Speed iCoupler
- 3000 V_{DC} isolation protection on PROFIBUS side

PROFIBUS Gateways

PROFIBUS/Modbus RTU Gateway

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

GW-7552 CR

- Protocol & Hierarchy: DP-V0 Slave
- Detect transmission rate (9.6 to 12000 kbps) on PROFIBUS automatically
- 128 bytes max. input data length
- 130 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 to 115.2 kbps
- Network Isolation Protection: High Speed iCoupler
- 3000 V_{DC} isolation protection on PROFIBUS side

PROFIBUS/Modbus TCP Gateway

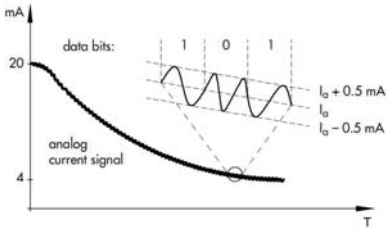
GW-7553 Gateway is specially designed for the slave device of PROFIBUS DP protocol allows the PROFIBUS master to access the Modbus TCP devices.

NEW
GW-7553 CR

- Protocol & Hierarchy: DP-V0 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)
- 128 bytes max. input data length
- 131 bytes max. output data length
- Support Modbus TCP/RTU/ASCII master/slave protocol
- PROFIBUS address 0 ~ 126 set by DIP switch
- Network Isolation Protection: 2500 V_{rms} High Speed iCoupler
- 3000 V_{DC} isolation protection on PROFIBUS side

5.7. HART Introduction & Products

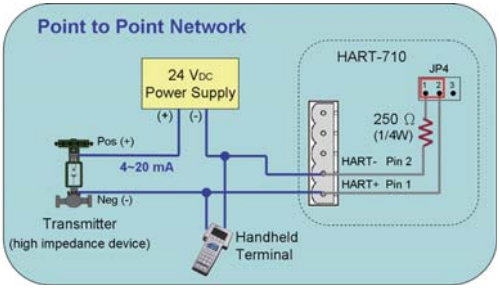
HART Field Communications Protocol extends this 4 ~ 20 mA standard to enhance communication with smart field instruments. The protocol preserves the 4 ~ 20 mA signal and enables two-way digital communications to occur without disturbing the integrity of the 4 ~ 20 mA signal. Unlike other communication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

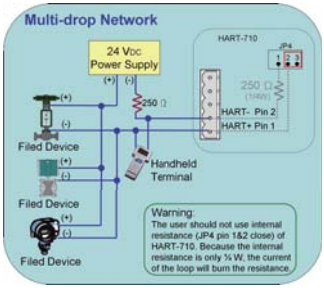


Here are two main operational modes of HART instruments: analog/digital mode, and multi-drop mode.

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	5-7-2
HART Module		
I-87H17W	HART module for PAC	5-7-2
HART Converter		
I-75H0	USB to HART Converter	5-7-2

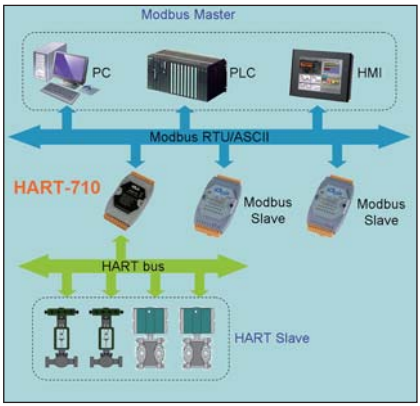
HART Gateways

Modbus to HART Gateway

The 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.

NEW
HART-710 CR

- 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



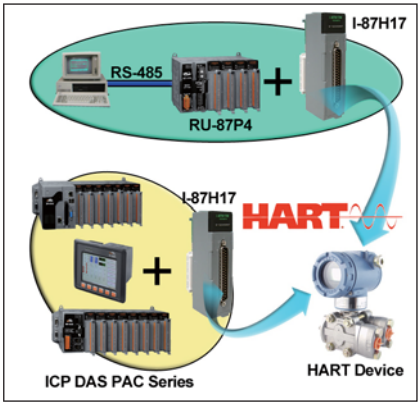
HART Module

HART module for PAC

The I-87H17W is a HART analog input module. It is a data acquisition and control modules, providing analog-to-digital, and Highway Addressable Remote Transducer. It can be remotely controlled via DCON protocol announced by ICP DAS. The I-87H17W also provides APIs for users' programs on PCs or PACs of ICP DAS.

Available soon
I-87H17W CR

- Support 4 ~ 20 mA current input
- Support HART protocol
- 2- or 4-wire transmitters
- With a built-in resistor,
- Changeable sampling rate
- Open wire detection
- 4 kV ESD protection
- 2500 V_{DC} intra-module isolation
- RoHS compliance



HART Converter

USB to HART Converter

The I-75H0 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-75H0.

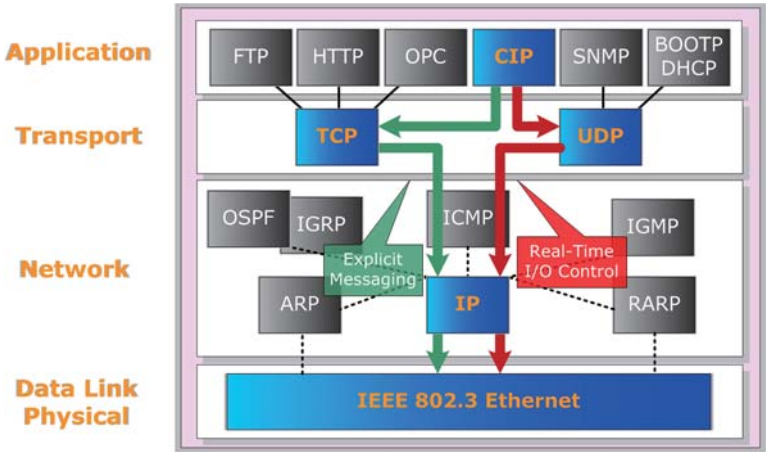
Available soon
I-75H0 CR

- 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
- Provide utility tool for module configuration
- No external power supply (powered by USB)
- Support firmware update via USB
- Provide PWR/RUN/ERR indication LED
- 4kV ESD Protection

5.8. 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

EtherNet/IP Gateways

EtherNet/IP server to Modbus RTU master Gateway

The tIPGW-710 (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.

Available soon

tIPGW-710 CR

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)

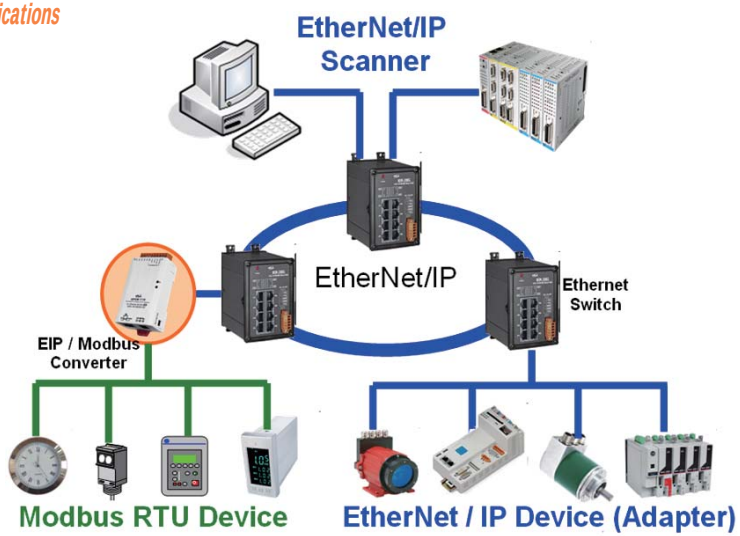
EtherNet/IP Features

- 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:
  - 01_{hex}: Read Output Status
  - 02_{hex}: Read Input Status
  - 03_{hex}: Read Multiple Data Registers
  - 04_{hex}: Read Input Registers
  - $0F_{hex}$: Write Multiple Bits
  - 10_{hex}: Write Multiple Data Register
- Maximum data size per Modbus slave device: 240 bytes

Applications



5.9. 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 Gateways		
BMGW-510	BACnet/IP Server to Modbus RTU Master Gateway	5-9-1
BMGW-511	BACnet/IP Server to Modbus TCP Client Gateway	

BACnet Gateways

BACnet/IP Server to Modbus RTU Master Gateway

BMGW-510 is a fully configurable universal Modbus RTU to BACnet/IP gateway. The BMGW-510 includes BACnet/IP Server and Modbus RTU Master which is used to make Modbus RTU devices accessible on a BACnet network.

Available soon
BMGW-510 CR

- 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

BMGW-511 is a fully configurable universal Modbus TCP to BACnet/IP gateway. The BMGW-511 includes BACnet/IP Server and Modbus TCP client which is used to make Modbus TCP devices accessible on a BACnet network.

Available soon
BMGW-511 CR

- 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