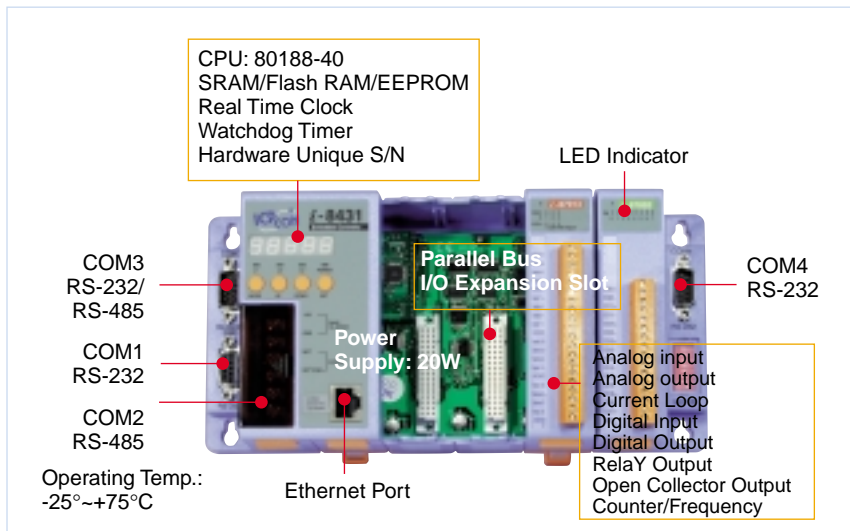


i-8000 Compact Embedded Controller

SERIES



Block Diagram of I-8000

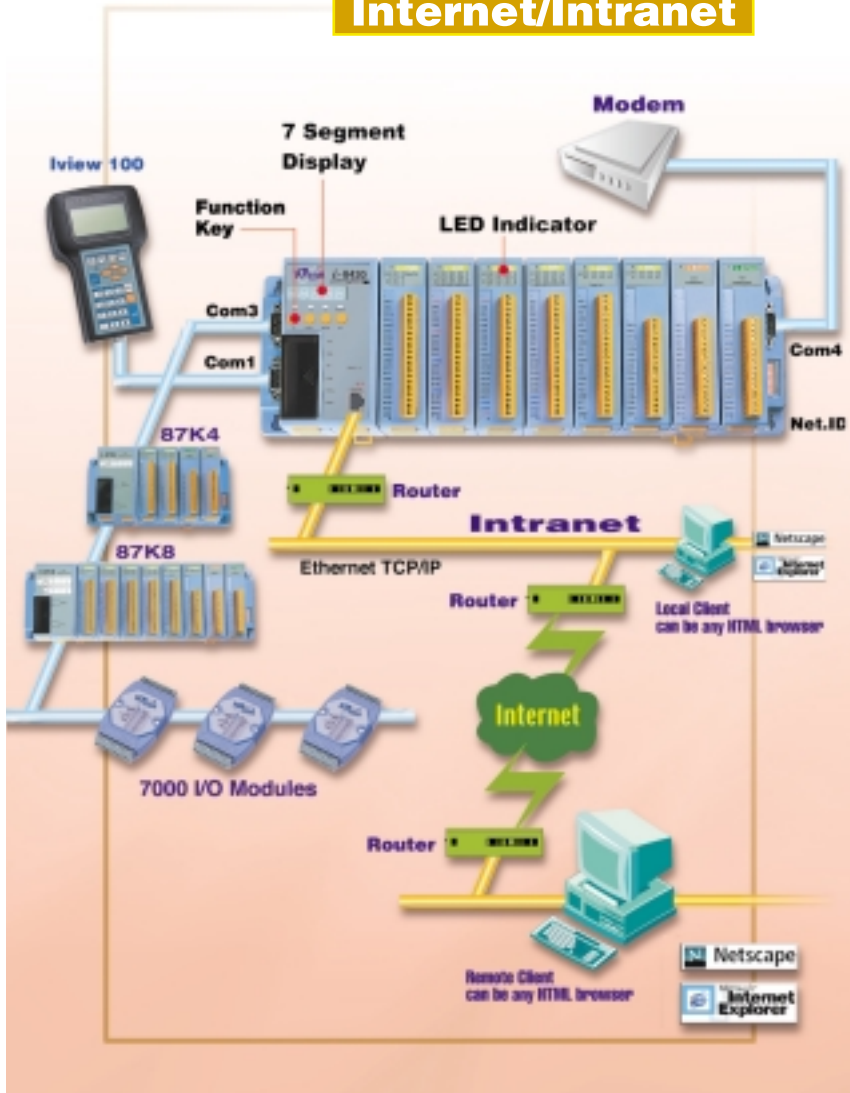
Introduction

The 8000 is a modular network based system with the capability of connecting I/O either through its own local bus or alternatively through I/O expansion or network extension. The unit comprises a main control unit with a range of standard communication interfaces, and an I/O bus permitting I/O expansion. The bus is hybrid in nature providing the facility to connect either serial or parallel I/O modules. The parallel bus is used for high-speed data transfer. The unit can communicate either using serial communications (RS232, RS485), Ethernet, or CANbus. The Ethernet version of the product supports an integrated web server permitting Internet and Intranet applications.

The 8000 can be used as an intelligent distributed data acquisition front end connected to a Host machine running a standard SCADA package, or alternatively it can be user programmed as an autonomous controller running an embedded software application. Significant non-volatile memory is available for data and program storage. The product is made up of four basic components: 1. Main Control Unit (MCU) 2. I/O Expansion Unit 3. I/O modules 4. Embedded OS.

All I-8000 embedded controller equip MiniOS7 embedded OS. It is developed by ICP DAS Co., LTD and compatible to DOS. MiniOS7 has more features than regular DOS in embedded applications, such as shorter power-up time, built-in hardware diagnostic function, directly support I-8000 and I-7000 modules without library, directly support internal or movable memory devices.

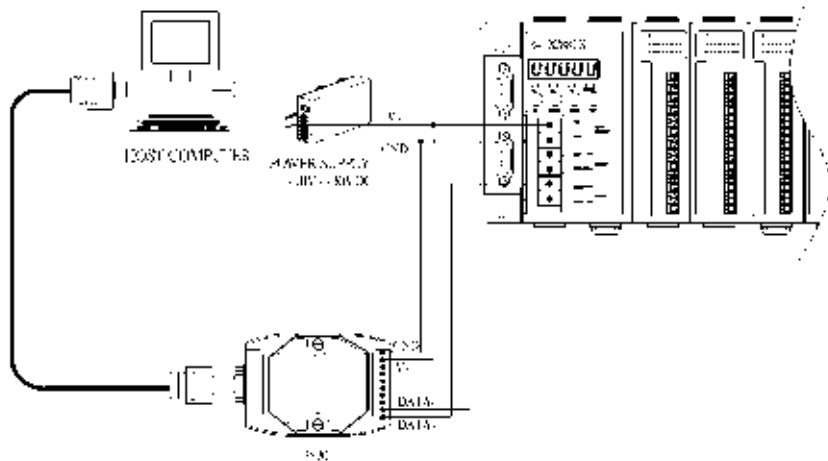
Solution for Internet/Intranet



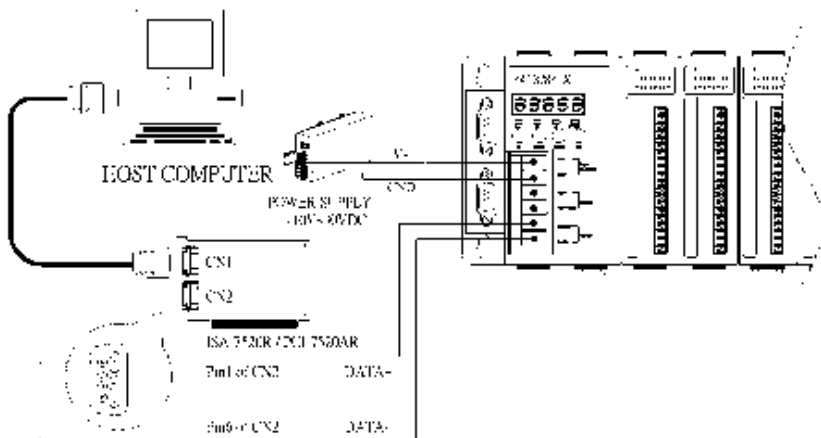
U SERIES

Connect I-841X/881X to Host-PC

Configuration A

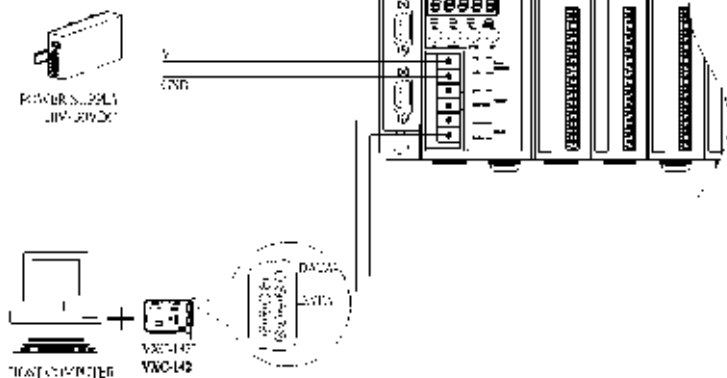


Configuration B



i-8000 Compact Embedded Controller SERIES

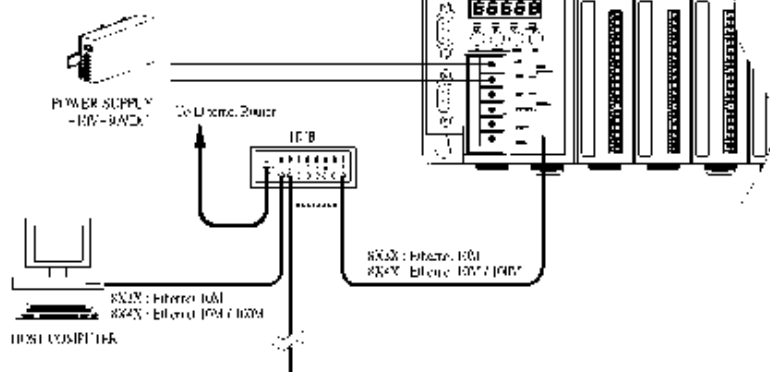
Configuration C



VXC-182I: 2-port serial card

- COM3: RS-422/RS-485 Support
RS-422/485, 921.6K, 3000V isolated,
Self-tuner chip inside
- COM4: RS-232 921.6K, non-isolated
- Plug & play driver support COM3 & COM4

Configuration D

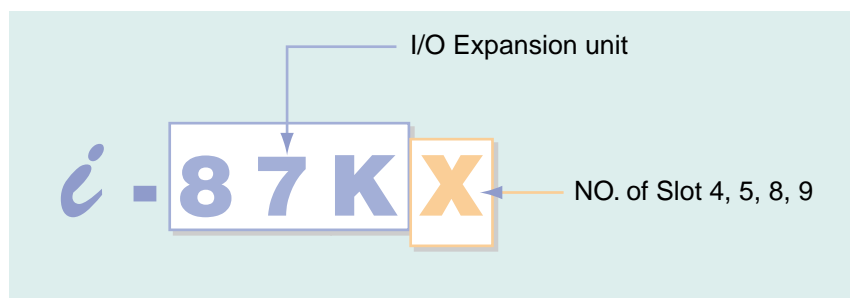
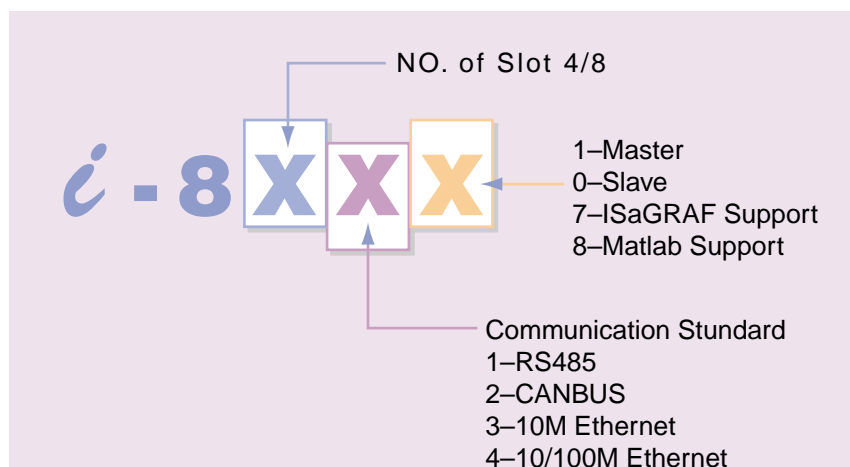


i-8000 **Main Control Unit (MCU)**

SERIES

1. Main Control Unit (MCU):

The MCU is the powerhouse of the 8000. Each MCU comprises a central processor module (CPM), a power supply, a four (4) or eight (8) slot backplane for either 4 or 8 Parallel I/O modules. The CPM is powerful integrated processing engine comprising a CPU, RAM and ROM, and an option of communication interfaces including RS-485, Ethernet and CANbus.



i-8000 Main Control Unit (MCU)

SERIES

Main Control Unit Selection Guide

Model	Description (Note1)	CPU 80188 40MHz	Flash	SRAM	Slot	COM1 Note2	COM2	COM3 Note4	COM4 Note5
I-8410 I-8810	Embedded Controller	Y	256KB	256KB	4 8	Y	RS-485 NOTE3	Y	-
I-8411 I-8811	Embedded Controller	Y	512KB	512KB	4 8	Y	RS-485 NOTE3	Y	Y
I-8417 I-8817	ISaGRAF Embedded Controller	Y	512KB	512KB	4 8	Y	RS-485 NOTE3	Y	Y
I-8418 I-8818	Matlab Embedded Controller	Y	512KB	512KB	4 8	Y	RS-485 NOTE3	Y	Y
I-8420 I-8820	Embedded Controller	Y	256KB	256KB	4 8	Y	CAN	Y	-
I-8421 I-8821	Embedded Controller	Y	512KB	512KB	4 8	Y	CAN	Y	Y
I-8430 I-8830	Embedded Controller	Y	256KB	256KB	4 8	Y	10 Base T	Y	-
I-8431 I-8831	Embedded Controller	Y	512KB	512KB	4 8	Y	10 Base T	Y	Y
I-8437 I-8837	ISaGRAF Embedded Controller	Y	512KB	512KB	4 8	Y	10 Base T	Y	Y
I-8438 I-8838	IMatlab Embedded Controller	Y	512KB	512KB	4 8	Y	10 Base T	Y	Y

Note1: All above embedded controller equip MiniOS7 and Self-tuner chip.

Note2: RS-232 port; 115.2K bps; TXD, RXD signal; Program download port.

Note3: Isolated RS-485 port; 921.6K bps; Data+, Data-

Note4: RS-232/RS-485; 115.2K bps; RS-232/TXD, RXD, RTS, CTS, GND; RS-485/Data+, Data-

Note5: RS-232 port; 115.2K bps; RS-232/TXD, RXD, RTS, CTS, DSR, DTR, DCD, RI, GND; Modem control

Optional:

The X-socket of Main control unit can add a SRAM or Flash module, such as the following modules

1. S128: 128K battery backup SRAM module for all I-8000 Embedded Controller
2. S256: 256K battery backup SRAM module for all I-8000 Embedded Controller
3. S512: 512K battery backup SRAM module for all I-8000 Embedded Controller
4. F002: 2 MB Flash disk module for all I-8000 Embedded Controller
5. F004: 4 MB Flash disk module for all I-8000 Embedded Controller
6. F008: 8 MB Flash disk module for all I-8000 Embedded Controller
4. F016: 16 MB Flash disk module for all I-8000 Embedded Controller
5. F032: 32 MB Flash disk module for all I-8000 Embedded Controller

i-8000 *Embedded Controller*

SERIES



Ordering Information:

I-8410: Embedded Controller



Ordering Information:

I-8411: Embedded Controller



Ordering Information:

I-8810: Embedded Controller



Ordering Information:

I-8811: Embedded Controller

Specifications & Features

- CPU 80188, 40MHz
- SRAM:
256K bytes (for I-8410/8810)
512K bytes (for I-8411/8811)
- Flash Memory:
256K bytes (for I-8410/8810)
512K bytes (for I-8411/8811)
- EEPROM: 2K bytes
- 64-bit hardware unique serial number (for I-8411/8811)
- Built-in Watchdog Timer
- Real Time Clock
(for I-8411/8811)
- COM0: Internal use
- COM1: RS-232/Program download port
- COM2: RS-485
- COM3: RS-232/485
- COM4: RS-232 (I-8411/8811)
- S-MMI:
Small Man Machine Interface
- I/O Expansion Slot
4-slot for I-8410/8411
8-slot for I-8810/8811
- Power Supply: 20W
Unregulated +10Vdc to +30Vdc
- Environment
Operating Temp.:
-25°C to + 75°C
Storage Temp.:
-30°C to + 85°C
- Humidity: 5 ~95%
- Dimensions:
418 x 110 x 75.5 mm (8 slot)
230 x 110 x 75.5 mm (4-slot)

i-8000 *Embedded Internet/Ethernet Controller*

SERIES



Ordering Information:

I-8430: Embedded Controller



Ordering Information:

I-8431: Embedded Controller



Ordering Information:

I-8830: Embedded Controller



Ordering Information:

I-8831: Embedded Controller

Specifications & Features

- CPU 80188, 40MHz
- SRAM:
256K bytes (for I-8430/8830)
512K bytes (for I-8431/8831)
- Flash Memory:
256K bytes (for I-8430/8830)
512K bytes (for I-8431/8831)
- EEPROM: 2K bytes
- 64-bit hardware unique serial number
- Built-in Watchdog Timer
- Real Time Clock
- COM0: Internal use
- COM1: RS-232/Program download port
- 10 Base T:
NE2000 compatible
- COM3: RS-232/485
- COM4: RS-232 (I-8431/8831)
- S-MMI:
Small Man Machine Interface
- I/O Expansion Slot
4-slot for I-8430/8431
8-slot for I-8830/8831
- Power Supply: 20W
Unregulated +10Vdc to +30Vdc
- Environment
Operating Temp.:
-25°C to + 75°C
Storage Temp.:
-30°C to + 85°C
- Humidity: 5 ~95%
- Dimensions:
418 x 110 x 75.5 mm (8 slot)
230 x 110 x 75.5 mm (4-slot)

i-8000 **Embedded Controller for CAN Bus** SERIES

Will be available



Ordering Information:

I-8420: Embedded Controller



Ordering Information:

I-8421: Embedded Controller



Ordering Information:

I-8820: Embedded Controller



Ordering Information:

I-8821: Embedded Controller

Specifications & Features

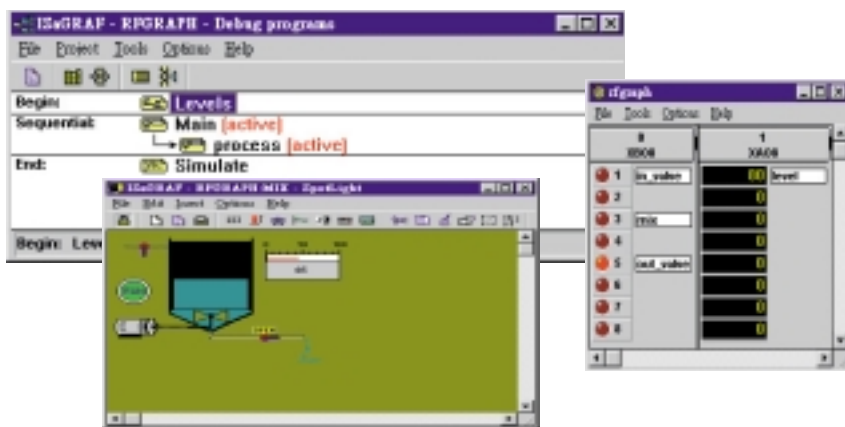
- CPU 80188, 40MHz
- SRAM:
256K bytes (for I-8420/8820)
512K bytes (for I-8421/8821)
- Flash Memory:
256K bytes (for I-8420/8820)
512K bytes (for I-8421/8821)
- EEPROM: 2K bytes
- 64-bit hardware unique serial number
- Built-in Watchdog Timer
- Real Time Clock
- COM1: RS-232/Program download port
- CAN:
CANOpen & DeviceNet
- COM3: RS-232/485
- COM4: RS-232 (I-8421/8821)
- S-MMI:
Small Man Machine Interface
- I/O Expansion Slot
4-slot for I-8420/8421
8-slot for I-8820/8821
- Power Supply: 20W
Unregulated +10Vdc to +30Vdc
- Environment
Operating Temp.:
-25°C to + 75°C
Storage Temp.:
-30°C to + 85°C
- Humidity: 5 ~95%
- Dimensions:
418 x 110 x 75.5 mm (8 slot)
230 x 110 x 75.5 mm (4-slot)

i-8000 **ISaGRAF Embedded Controller**

SERIES

What is ISaGRAF ?

ISaGRAF was the first Windows-based development environment to fully support all five of the PLC languages : Ladder Diagram (LD), Function Block Diagram (FBD), Sequential Function Chart (SFC), Structured Text (ST), and Instruction List (IL). Additionally, for the ultimate in power and flexibility, ISaGRAF supports functions and function blocks written in C and/or IEC61131-3 languages. Applications for ISaGRAF range from simple machine control to complex processes to high speed, high performance and high reliability tasks.



ISaGRAF and I-8XX7 series

The ISaGRAF application can be easily applied on 84X7/88X7 series. There are 3 advantages by adding ISaGRAF programming. The first is the PLC language is easy to design. Instead of the C language, ISaGRAF supports all five IEC61131-3 languages plus Flow Chart language (FC).

The second is the powerful communication ability. There are 4 communication ports on the 84X7/88X7 controllers. The third advantage is the integration to SCADA software and HMI become easy and powerful by choosing the Modbus protocol. SCADA is such as Intouch, FIX, Wizcon, Citect ... HMI is something like Touch 200 touch panel or any hardware or software that support Modbus protocol.

i-8000 ISaGRAF Embedded Controller SERIES



Ordering Information:

I-8417: ISaGRAF Embedded Controller

Specifications & Features

- The hardware of I-8417 is the same as I-8411. The I-8000 Target driver and ISaGRAF Target license are included



Ordering Information:

I-8437: ISaGRAF Embedded Controller

- The hardware of I-8437 is the same as I-8431. The I-8000 Target driver and ISaGRAF Target license are included



Ordering Information:

I-8817: ISaGRAF Embedded Controller

- The hardware of I-8817 is the same as I-8811. The I-8000 Target driver and ISaGRAF Target license are included



Ordering Information:

I-8837: ISaGRAF Embedded Controller

- The hardware of I-8837 is the same as I-8831. The I-8000 Target driver and ISaGRAF Target license are included

From now on, get rid of hand coding.

The fastest and easiest solution to implement your real-time embedded designs and control system development.



Introduction

The Matlab Embedded Controller are designed to work with MATLAB (6.0) / Simulink / Real Time Workshop Embedded Coder and Stateflow / Stateflow Coder (optional) for industry applications. It equipped with various I/O (DI/DO, AD/DA, RS232/485 and Ethernet Interface) and can be used in harshness environment. Over 30 IO Bridge and system-level Simulink blocksets have been developed. These blocksets has been integrated to work with Stateflow, RTW and Coders. By using Simulink developing environment and Matlab Embedded Controller's blocksets, application algorithm such as: Arbitrary Waveform Generator, Data Acquisition, Timer, Addressable RS232/Ethernet Protocol Converter and PLC applications can be easily constructed and verified. Once the algorithm been verified, user can convert model to executionable code and downloading to controller by just one click. Hand coding is no longer needed when using RP Controller. Engineer can more focus on algorithm design and system validations.

Benefits1. Magically compress your design cycle 2. Small but smart 3. Easy to use, easy to design 4. Robust itself 5. Strong technical support 6. Cost-effective solution.

Software Requirement: MATLAB, Simulink, Stateflow, Real-Time Workshop, Real-Time Workshop Embedded Coder

i-8000 **Matlab Embedded Controller** SERIES



Ordering Information:

I-8418: Matlab Embedded Controller



Ordering Information:

I-8438: Matlab Embedded Controller



Ordering Information:

I-8818: Matlab Embedded Controller



Ordering Information:

I-8838: Matlab Embedded Controller

Specifications & Features

- The hardware of I-8418 is the same as I-8411.

The IO bridge for I-8000 is included

- The hardware of I-8438 is the same as I-8431.

The IO bridge for I-8000 is included

- The hardware of I-8818 is the same as I-8811.

The IO bridge for I-8000 is included

- The hardware of I-8838 is the same as I-8831.

The IO bridge for I-8000 is included

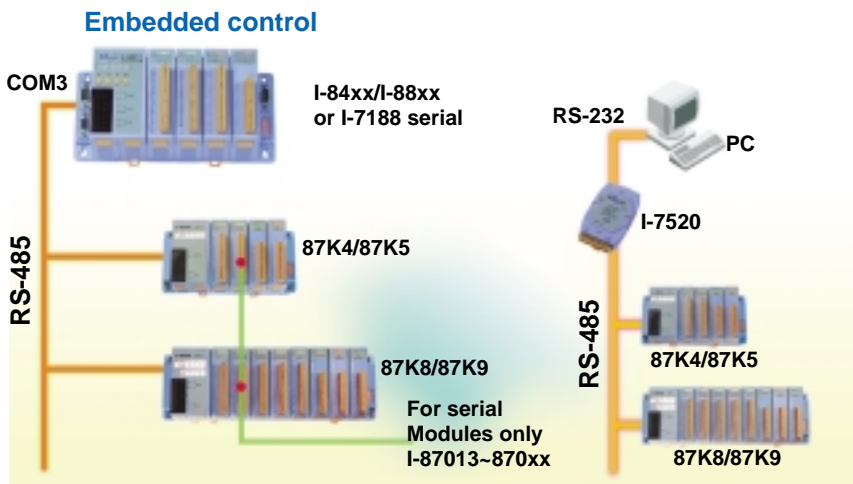
i-8000 I/O Expansion Unit

SERIES

2. I/O Expansion Unit:

The I/O expansion units are used to extend the number of I/O modules. Each expansion unit comprises a Power supply and a Back Plane with 4, or 5 or 8 or 9 Serial I/O Expansion Slot. The I/O expansion units, 87K4, 87K5, 87K8, 87K9 are equipped with a 115.2K BPS RS-485 bus which links to expansion unit to the main control unit;

Block Diagram of 87K Expansion unit



I/O Expansion Unit Selection Guide

Model	Description	CPU	Slot	Power Supply	COM2	Support I/O Module
87K4 I/O Expansion Unit	4 Slot I/O Expansion Unit	None	4	20W	(Note1)	Serial I/O Module only
87K5 I/O Expansion Unit	5 Slot I/O Expansion Unit	None	5	20W	(Note1)	Serial I/O Module only
87K8 I/O Expansion Unit	8 Slot I/O Expansion Unit	None	8	20W	(Note1)	Serial I/O Module only
87K9 I/O Expansion Unit	9 Slot I/O Expansion Unit	None	9	20W	(Note1)	Serial I/O Module only

Note1: Isolated RS-485 port; 921.6K bps; Data+, Data-

i-8000 I/O Expansion Unit

SERIES



Ordering Information:

I-87K4: I/O Expansion unit with 4 I/O slots



Ordering Information:

I-87K5: I/O Expansion unit with 5 I/O slots



Ordering Information:

I-87K8: I/O Expansion unit with 8 I/O slots



Ordering Information:

I-87K9: I/O Expansion unit with 9 I/O slots

Specifications & Features

COM2

- RS-485, 921.6K bps max.
- Data+, Data-
- 16550 compatible, 16 bytes FIFO
- Directly drive 256 of 7000 modules
- max. distance: 4000 feet (1.2Km)
- Isolation voltage: 2500Vdc

I/O Expansion Slot

- Support serial I/O
- 4 slots for I-87K4, 5 slots for I-87K5, 8 slots for I-87K8, 9 slots for I-87K9

Power Supply

- Unregulated +10Vdc to +30Vdc
- 20W

Environment

- Operating temp.: -25°C to + 75°C
- Storage Temperature: -30°C to + 85°C
- Humidity: 5 ~ 95%, non-condensing

3. I/O Modules

There are two types of I/O modules, Parallel and Serial. The parallel modules are high-speed modules and have to be installed in the Main Control Unit. The Serial I/O Modules can be installed in either the Parallel or Serial I/O expansion slots.



Parallel I/O Modules (8K series Modules)

Features:

- High speed A/D: 100K samples/second
- High speed D/A: 30K from -10V to +10V
- High speed D/I & D/O; All Digital I/O Modules provide visual indication of status via LED indicators.
- High speed stepping/Servo motion control module
- High speed encoder module
- High performance Counter / Frequency modules
- High speed multi-channel RS-232/RS-422/RS-485 modules
- Printer interface & X-Socket interface module

Serial I/O modules (87K series Modules)

Features:

- RTD Sensor Input Module
- Thermocouple Input Module
- Strain Gauge Input Module
- High resolution Multi-channel Analog Input Module
- Isolated Multi-channel D/A Modules
- Digital Input and Digital Output Modules with Latch and counter function;
- Counter / Frequency modules

i-8000 Parallel I/O Modules (8K Series)

8K Digital I/O, Relay and Counter Modules Selection Guide

Model (I-)	8040	8041	8042	8050	8051	8052	8053	8054	8055	8056
Digital input Channels	32	–	16	Can be up to 16	16	8 isolation 5000V differential	16 isolation 3750V	8 isolation 3750V	8	–
Digital Output Channels	–	32	16	Can be up to 16	–	–	–	8 open collector isolation 3750V	8 open collector	16 open collector
LED Display	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Safe Value	–	–	–	–	–	–	–	–	–	–
Power-on Preset Value	–	–	–	–	–	–	–	–	–	–
Dual Watchdog	–	–	–	–	–	–	–	–	–	–
Availability	call	call	call	call	Y	Y	Y	Y	Y	Y

Model (I-)	8057	8058	8060	8063	8064	8065	8066	8068	8069
Digital input Channels	–	8 isolation 3750V AC/DC Max.250V Input	–	4 isolation 3750V	–	–	–	–	–
Digital Output Channels	16 open-collector Isolation 3750V	–	6 Form C	4 Form C	8 Channel Relay Form A AC 250V/5A DC 30V/5A	8 Channel SSR AC-type Relay Form A 24 to 265 Vrms@ 1.0Arms	8 Channel SSR DC-type Relay Form A DC: 3-30VDC @1.0A	8 Channel Relay Form A x4 Form c x4	8 Photo Mos Relay Form A x8
LED Display	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Safe Value	–	–	–	–	–	–	–	–	–
Power-on Preset Value	–	–	–	–	–	–	–	–	–
Dual Watchdog	–	–	–	–	–	–	–	–	–
Availability	Yes	call	Y	Y	call	call	call	Y	call

i-8000 Parallel I/O Modules (8K Series)

8K Digital Modules

I-8040



I-8040:

32-channel Isolated Digital Input Module

- Digital input channels: 32
- 3750V isolation (External power)
- 3000V isolation (Internal power)
- Input Voltage: 3.5V~30V
- Response time: 1 KHz Max.

I-8041



I-8041:

32-channel Isolated Digital Output Module

- Digital output channels: 32
- 3750V isolation (External power)
- Open-collector Output: 125mA/channel
- Response time: 10 KHz Max.

I-8042



I-8042:

16-channel Isolated Digital Input & 16-channel Isolated Digital Output Module

- Digital Input channels: 16
- Digital Output channels: 16
- Other spec. are similar to I-8040 and I-8041

I-8050



I-8050:

16-channel Universal Digital I/O Module

- Digital I/O channels: 16
- I/O Type: Selectable by jumper
- Digital Input: +2V(0); +4V~30V(1)
- Digital Output: Open-collector Output: 125mA/channel

I-8051



I-8051:

16-channel Digital Input Module

- Digital Input channels: 16
- Digital Input level:
Logical level0: +1V max.
Logical level 1: +3.5V~30V
- Power: 0.5W

8K Digital Modules

I-8052



I-8052:

8-channel Isolated Digital Input Module

- Digital input channels: 8
- Differential input
Logical level 0: +1V max.
Logical level 1: +3.5V~30V
- Isolation: 5000 Vdc

I-8053



I-8053:

16-channel Isolated Digital Input Module

- Digital input channels: 16
- Single-ended input
Logical level 0: +1V max.
Logical level 1: +3.5V~30V
Input resistance: 3K Ω , 1/4W

I-8054



I-8054:

16-channel Isolated Digital I/O Module

- Digital input channels: 8
Logical level 0: +1V max.
Logical level 1: +3.5V~30V
- Digital output channels: 8
O.C. output: 375mA/channel, 30V

I-8055



I-8055:

16-channel Digital I/O Module

- Digital input channels: 8
Logical level 0: +1V max.
Logical level 1: +3.5V~30V
- Digital output channels: 8
O.C. output: 125mA/channel

I-8056



I-8056:

16-channel Non-isolated Open-collector Output Module

- Digital output channels: 16
D.C. output: 125mA/channel, 30V
- Power Consumption: 0.5W

i-8000 *Parallel I/O Modules (8K Series)*

SERIES

8K Digital Modules

I-8057



I-8057:

16-channel Isolated Open Collector Output Module

- Digital output channels: 16
O.C. output: 125mA/channel, 30V
- Isolation: 3750 Vdc
- Power Consumption: 0.8W

I-8058



I-8058:

8-channel Isolated Digital Input Module

- Digital input channels: 8
- Input type: differential
- Input Voltage
Logical High: AC/DC 80V mini
Logical Low: AC/DC 30V max.
- Maximum Input voltage: AC/DC 250V
- Operating frequency: 100KHz(max.)
- Isolation: 3750 Vrms

I-8060



I-8060:

6-channel Relay Output Module

- Digital Output channels: 6
- Form C relay
- Contact Rating:
AC: 125V @0.6A; 250V @0.3A
DC: 30V @2A; 110V @0.6A

I-8063



I-8063:

8-channel Isolated Digital I/O Module

- Digital input channels: 4
Differential Input
- Digital output channels: 4
Form C relay
AC: 125V @0.6A; 250V @0.3A

I-8064



I-8064:

8-channel Power Relay Output Module

- Digital output channels: 8
- Form A relay
- Contact Rating: AC: 250V @5A
DC: 30V @5A

i-8000 Parallel I/O Modules (8K Series)

SERIES

8K Digital Modules

I-8065



I-8065:

8-channel SSR-AC Output Module

- Digital output channels: 8
- Form A SSR
- Contact Rating:
AC: 24~265Vrms @1.0Arms
Max. load current: 1.0Arms

I-8066



I-8066:

8-channel SSR-DC Output Module

- Digital output channels: 8
- Form A SSR
- Contact Rating:
DC: 3~30 VDC @1.0A
Max. load current: 1.0A

I-8068



I-8068:

8-channel Relay Output Module

- Digital output channels: 8
Form C x4; Form A x4
- Contact Rating:
AC: 120V @0.5A
DC: 30V @1A

I-8069



I-8069:

8-channel Photo Mos Relay Output Module

- Digital output channels: 8
- Form A Photo Mos relay
- Photo Mos Relay
- Load voltage: 350V (Peak AC)
- Continuous load current: 0.13A

i-8000 Parallel I/O Modules (8K Series)

8K Analog Input/Output Modules

I-8017H



I-8017H:

8-channel Isolated Analog Input Module

- Analog input channels: 8
- Resolution: 14-bit
- Input Type: differential
- Input Range: $\pm 5V$, $\pm 2.5V$, $\pm 1.25V$, 0-20mA (need external resistor)
- Sampling rate: 100K
- Isolation Voltage: 3000V dc

I-8024



I-8024:

4-channel Isolated Analog Output Module

- Analog output channels: 4
- Voltage output: $\pm 10V$
- Current output: 0~20mA/4~20mA
- Isolation: 3000V

I-8080



Will be Available

I-8080:

4-channel Counter & Frequency Module

- Counter channels: 4
- Input frequency:
TTL input; up to 5MHz
- Isolated input: 0.1Hz~5KHz

I-8081



Will be Available

I-8081:

4-channel Frequency Module

- Counter channels: 4
- Input frequency:
TTL input; up to 5MHz
- Isolated input: 0.1Hz~100KHz

I-8083



Will be Available

I-8083:

4-channel Counter Module

- Counter channels: 4
- Input frequency:
TTL input; up to 5MHz
- Isolated input: 0.1Hz~100KHz

i-8000 Parallel I/O Modules (8K Series)

SERIES

8K Motion Control & Others

I-8090



I-8090:

3-axis Encoder Input Module

- Channels: 3
- Encoder type: single-ended or differential
- Logical level: TTL and COMS compatible
- Accept inputs from incremental or quadrature encoders
- Maximum quadrature input frequency: 1MHz
- Encoder input modes: Quadrature, Up/Down, Pulse/Direction

I-8091



I-8091:

2-axis Stepper/Servo Module

- Stepper channels: 2
- Step rate: 1pps~250Kpps
- Max. step count: +/-2
- Acceleration/Deceleration: Automatic trapezoidal acceleration/deceleration
- Output pulse signal:
Two pulse (CW/CCW) mode or one pulse (Pulse, Direction) mode
- Output polarity: Positive/Negative programmable

I-8072



Will be Available

I-8072:

Printer Port & Xsocket Card

- Support Printer port
- Support two Xsocket

I-8074



Will be Available

I-8074:

NvsRAM card

- 128kbyte
- 512kbyte

i-8000 Parallel I/O Modules (8K Series)

**8K RS-232/RS-422/RS-485 Module
Selection Guide**

Module	I-8112	I-8114	I-8142	I-8142i	I-8144
Interface	RS-232	RS-232	RS-422/ RS485	RS-422/ RS485	RS-422/ RS485
Channels	2	4	2	2	4
Max. Channels	16	32	16	16	32
Max. Speed (K bps)	921.6	921.6	921.6	921.6	921.6
I/O Controller	16C550	16C550	16C550	16C550	16C550
Isolation	–	–	–	3000V	–
Surge Protection	Yes	Yes	Yes	Yes	Yes
Self-tuner Inside	–	–	Yes	Yes	Yes
Connectors	RJ45 x 2	RJ45 x 4	RJ45 x 2	RJ45 x 2	RJ45 x 4
Vxcomm Driver Support	Yes	Yes	Yes	Yes	Yes
Power Consumption	1.2W	2.2W	1.2W	1.2W	2.2W

i-8000 **Parallel I/O Modules (8K Series)**

SERIES

8K RS-232/RS-422/RS-485 Modules

I-8112



I-8112:

2-channel RS-232 Module

- RS-232 channels: 2
- Modem control
- TXD, RXD, RTS, CTS, DSR, DTR, DCD, RI, GND
- Transmission speed: 921.6K bps
- Shared Interrupt

I-8114



Available
soon

I-8114:

4-channel RS-232 Module

- RS-232 channels: 4
- Modem control
- TXD, RXD, RTS, CTS, DSR, DTR, DCD, RI, GND
- Transmission speed: 921.6K bps
- Shared Interrupt

I-8142



I-8142:

2-channel RS-422/485 Module

- RS-422/485 channels: 2
- Self-tuner chip inside
- TXD+, TXD-, RXD+, RXD-, RTS+, RTS-, CTS+, CTS-, GND
- Transmission speed: 921.6K bps
- Shared Interrupt

I-8142I



Available
soon

I-8142I:

2-channel RS-422/485 Module

- RS-422/485 channels: 2
- Self-tuner chip inside
- TXD+, TXD-, RXD+, RXD-, RTS+, RTS-, CTS+, CTS-, GND
- Transmission speed: 921.6K bps
- Shared Interrupt
- Isolation: 3000V

I-8144



Available
soon

I-8144:

4-channel RS-422/485 Module

- RS-422/485 channels: 4
- Self-tuner chip inside
- TXD+, TXD-, RXD+, RXD-, RTS+, RTS-, CTS+, CTS-, GND
- Transmission speed: 921.6K bps
- Shared Interrupt

Multi-serial Cards for PC

VXC-182I



VXC-182I:

- PCI Bus
- COM3: RS-422/RS-485
Support RS-422/RS-485, 921.6K
communication speed, 3000V
Isolation, Self-tuner inside
- COM4: RS-232, 921.6K
communication speed, non-isolation
- Plug & play driver, support COM3 &
COM4

VXC-142



VXC-142:

- PCI Bus
- COM3/COM4: RS-422/RS-485
Support RS-422/RS-485, 921.6K
communication speed, non-isolated,
Self-tuner inside
- Plug & play driver, support COM3 &
COM4

i-8000 **Serial Modules (87K Series)**

SERIES

87K Digital I/O, Relay and Counter Modules Selection Guide

Module		I-87051	I-87052	I-87053	I-87054	I-87055	I-87057
Digital input Channels		16	8 differential Isolation (5000V)	16 Isolation (3750V)	8 Isolation (3750V)	8	—
Digital Output Channels			—	—	8 (open collector) Isolation (3750V)	8 (open collector) Isolation (3750V)	16 (open collector) Isolation (3750V)
Counter	Channels	16	8	16	8	8	—
	input frequency	100Hz	100Hz	100Hz	100Hz	100Hz	—
Safe Value		—	—	—	Yes	Yes	Yes
Power-on Preset Value		—	—	—	Yes	Yes	Yes
Dual Watchdog Timer		Yes	Yes	Yes	Yes	Yes	Yes
Availability		Y	Y	Y	Y	Y	Y

Module		I-87058	I-87063	I-87064	I-87065	I-87066	I-87068
Digital input Channels		8 differential Isolation (5000V)	4 Isolation (3750V)		—	—	—
Digital Output Channels		—	4 Channel Relay Form C x 4	8 Channel Relay Form A AC 250V/5A DC 30V/5A	8 Channel SSR AC-type Relay Form A 24 to 265 Vrms@1.0Arms	8 Channel SSR DC-type Relay Form A DC: 3-30VDC @1.0A	8 Channel Relay Form A x 4 Form C x 4
Counter	Channels	8	4	—	—	—	—
	input frequency	—	100Hz	—	—	—	—
Safe Value		—	Yes	Yes	Yes	Yes	Yes
Power-on Preset Value		—	Yes	Yes	Yes	Yes	Yes
Dual Watchdog Timer		Y	Yes	Yes	Yes	Yes	Yes
Availability		call	Y	Y	Y	Y	Y

i-8000 *Serial Modules (87K Series)*

SERIES

87K Digital Modules

I-87051



I-87051:

16-channel Digital Input Module

- Digital input channels: 16
- Digital input level:
 - on state: +1V max.
 - off state: +3.5V~30V

I-87052



I-87052:

8-channel Isolated Digital Input Module

- Digital input channels: 8
- Differential input
 - on state: +1V max.
 - off state: +3.5V~30V
- Isolation: 5000 Vrms

I-87053



I-87053:

16-channel Isolated Digital Input Module

- Digital input channels: 16
- Single-ended input
 - on state: +1V max.
 - off state: +3.5V~30V
- Isolation: 3750 Vrms

I-87054



I-87054:

16-channel Isolated Digital I/O Module

- Digital input channels: 8
 - on state: +1V max.
 - off state: +3.5V~30V
- Digital output channels: 8
 - O.C. output: 375mA/channel, 30V

I-87055



I-87055:

16-channel Digital I/O Module

- Digital output channels: 8
 - on state: +1V max.
 - off state: +3.5V~30V
- Digital output channels: 8
 - O.C. output: 100mA/channel

87K Digital Modules



I-87057:

16-channel Isolated Open Collector Output Module

- Digital output channels: 16
- O.C. output: 100mA/channel, 30V
- Isolation: 3750 Vrms

I-87058:

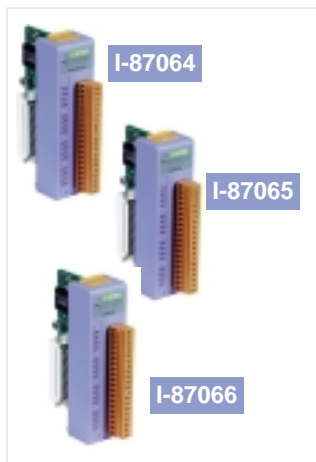
8-channel Isolated Digital Input Module

- Same as I-8058

I-87063:

8-channel Isolated Digital I/O Module

- Digital input channels: 4
- Differential Input
- Digital output channels: 4
- Form C
- AC: 0.6A @125Vac, 2A @30Vdc



I-87064:

8-channel Power Relay Output Module

I-87065:

8-channel SSR-AC Output Module

I-87066:

8-channel SSR-DC Output Module

- Digital Output channels: 8
- Form A (Normal open)
- Contact Rating:
 - I-87064 – AC:250V @5A DC:30V @5A
 - I-87065 – AC: 24~265Vrms @1.0 Arms; leakage current:1.5mA max.
 - I-87066 – DC: 3~30VDC @1.0A leakage current:0.1mA max.



I-87068:

8-channel Relay Output Module

- Digital output channels: 8
- Form C x 4; Form A x 4
- Contact Rating: AC: 125VAC @0.5A DC: 30VDC @1A

i-8000 *Serial Modules (87K Series)*

SERIES

87K Analog Input/Output Module Selection Guide

Module		I-87013	I-87016	I-87017	I-87018
Analog Input	Resolution	16 bit	16 bit	16 bit	16 bit
	Input channel	4 diff.	4 diff.	8 diff.	8 diff.
	Sampling rate	10 Hz (total)	10 Hz	10 Hz (total)	10 Hz (total)
	Voltage input	–	+/-15mV +/-50mV +/-100mV +/-500mV +/-1V +/-2.5V	+/-150mV +/-500mV +/-1V +/-5V +/-10V	+/-15mV +/-50mV +/-100mV +/-500mV +/-1V +/-2.5V
	Current input	–	+/-20mA	+/-20mA*	+/-20mA*
	Sensor input	RTD Pt/Ni-RTD	–	–	J.K.T.E.R.S.B.N.C thermocouple
	Input Linear scaling	–	Note 1	–	–
	Isolation Voltage	3000V	3000V	3000V	3000V
Dual Watchdog Timer		Yes	Yes	Yes	Yes
Availability		Y	Note 2	Y	Y

Note 1: Call manufacturer; Note 2: Will be available

Main Control Unit Selection Guide

Module		I-87022	I-87024	I-87026
Analog Input	Resolution	12 bit	14 bit	16 bit
	Output channels	2 (Note 1)	4	2 (Note 1)
	Voltage output	0-10V	+/-10V, 0-10V, +/-5V, 0-5V	0-10V
	Current output	0-20mA 4-20mA	0-20mA 4-20mA	0-20mA 4-20mA
Safe Value		Yes	Yes	Yes
Power-on Preset Value		Yes	Yes	Yes
Dual Watchdog Timer		Yes	Yes	Yes
Availability		Note 2	Yes	Note 2

Note 1: Channel to Channel isolation; Note 2: Will be available

87K Analog Input Modules

I-87013



I-87013:

4-channel RTD Input Module

- Analog Input channels: 4 diff.
- Input Type: 2/3/4 wire RTD
- Accuracy: $\pm 0.1\%$
- Sampling rate: 10Hz (total)
- C.M.R.: 150dB @ 50.60Hz
- N.M.R.: 100dB @ 50/60Hz
- Isolation: 3000Vrms

I-87016



Available soon

I-87016:

4-channel Isolated Strain Gauge Input Module

- Analog Input channels: 4
- Isolation: 3000V
- Detail spec. call distributor

I-87017

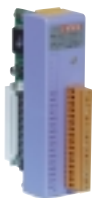


I-87017:

8-channel Analog Input Module

- Analog Input channels: 8 diff.
- Input Type: mV, V, mA (with external resistor)
- Input Impedance: 20M Ω
- Sampling rate: 10Hz (total)
- C.M.R.: 86dB
- Overvoltage Protection: -35~+35V
- Isolation: 3000Vrms

I-87018



I-87018:

8-channel Analog Input Module

- Analog Input channels: 8 diff.
- Input Type: mV, V, mA (with external resistor), Thermocouple (J/K/T/E/R/S/B/N/C/L/M/L2)
- Input Impedance: 20M Ω
- Sampling rate: 10Hz (total)
- C.M.R.: 150dB @ 50/60Hz
- N.M.R.: 100dB @ 50/60Hz
- Overvoltage Protection: -35~+35V
- Isolation: 3000Vrms

i-8000 **Serial Modules (87K Series)**

87K Analog Output Modules

I-87022



Available soon

I-87022:

2-channel Isolated Analog Output Module

- Analog output channels: 2
- Voltage output: 0-10V
- Current output: 0~20mA/4~20mA
- Resolution: 12 bits
- Power-on pre-set value
- Safe value
- Channel to channel isolation

I-87024



I-87024:

4-channel Isolated Analog Output Module

- Analog output channels: 4
- Voltage output: +/-10V
- Current output: 0~20mA/4~20mA
- Accuracy: +/-0.1% of FSR
- Resolution: +/-0.02% of FSR
- Span Temperature Co.: +/-20ppm/°C
- Isolation: 3000V

I-87026



Available soon

I-87026:

2-channel Isolated Analog Output Module

- Analog output channels: 2
- Voltage output: 0-10V
- Current output: 0~20mA/4~20mA
- Resolution: 16 bits
- Power-on pre-set value
- Safe value
- Channel to channel isolation

87K Counter/Frequency Modules

I-87082



Available soon

I-87082:

2-channel Counter/Frequency Module

- Counter channels: 2
- Input frequency:
100KHz (1Hz~100KHz)