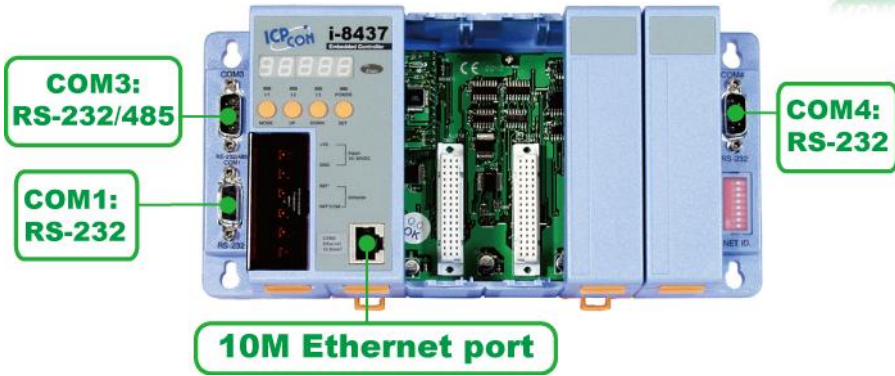


## I-8437-80 :



## I-8837-80 :

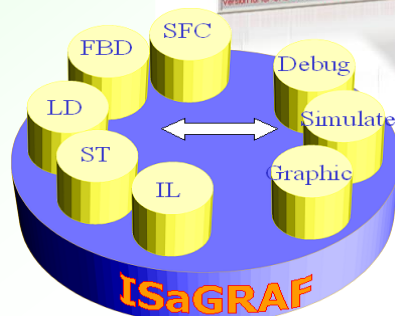
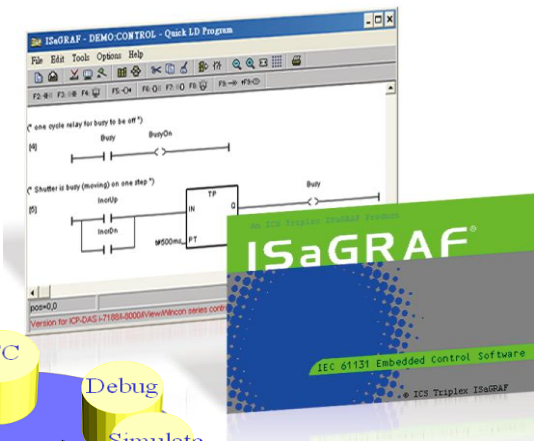


- ISaGRAF Ver. 3 SoftLogic Inside
- Support IEC 61131-3 + Flow Chart
- MiniOS7 Inside
- 80186-80 MHz CPU
- SRAM : 512 KB
- Flash : 512 KB
- I/O Slot : 4/8

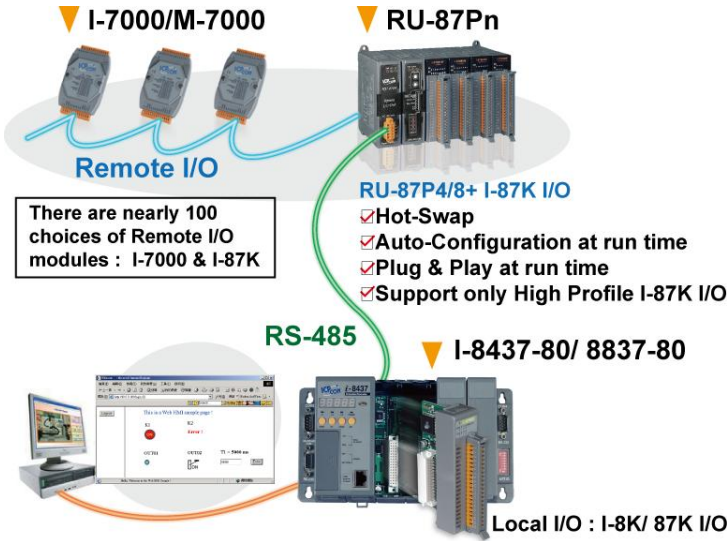
The I-8437-80/8837-80 is an Ethernet ISaGRAF PAC and includes ISaGRAF SoftLogic, It has one 10M Ethernet port, one RS-232/485 port and two RS-232 ports. The user can choose *Local I/O modules* : I-8K/I-87K I/O modules and *RS-485 Remote I/O modules* : I-7000 or expansion units (I-87Kn or RU-87Pn) plugged with I-87K serial I/O modules. Compared to I-8437/8837, I-8x37-80 is 2 ~ 4 times faster!

### The ISaGRAF PAC supports ISaGRAF Workbench Ver.3 :

- IEC 61131-3 Standard Open PLC Programming Languages + Flow Chart:
  1. Ladder
  2. Function Block
  3. SFC
  4. ST
  5. IL
  6. Flow Chart.
- Auto-Scan I/O
- Simulate program even without controller
- Debug on-line
- Control on-line
- Simple graphic HMI

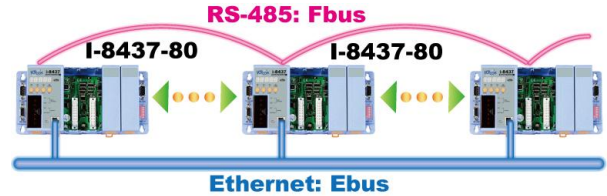


## Local/Remote I/O Application

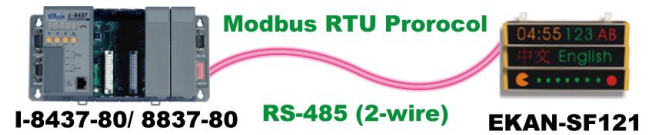


## Data Exchange: Ethernet & RS-485

- Through Ethernet: Ebus
- Through RS-485: Fbus
- PAC to PAC



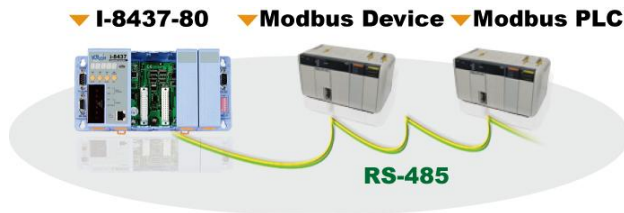
## Support EKAN Modbus LED



## Modbus Master

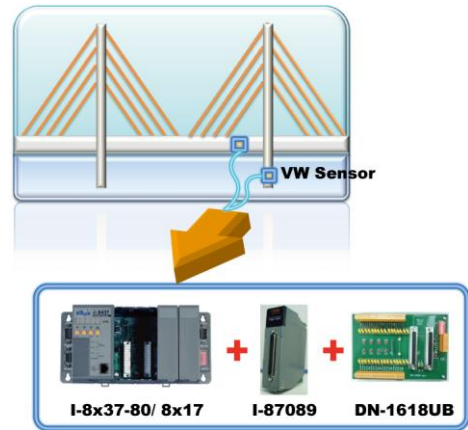
(RTU, ASCII, RS-232/485/422)

- Support 2 Modbus Master ports at the same time
- COM1, COM3, COM4 or COM5 (if plugged one I-8112/8114/8142/8144/8142i board)
- Can link to Modbus PLC or M-7000 I/O or Modbus devices (Power meter, temperature controller, inverter...)



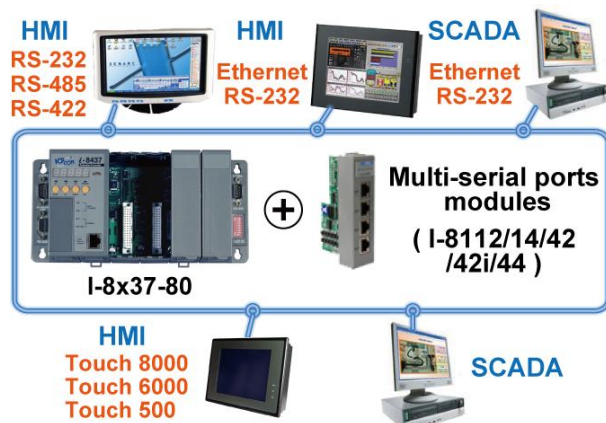
## Stress Monitoring Application of Constructions

More at [www.icpdas.com](http://www.icpdas.com) > FAQ > Software > ISaGRAF Ver.3 (English) - 091



## Modbus RTU/TCP Slave Ports

- Modbus RTU : max. 2 PC/HMI/SCADA connection
- Modbus TCP/IP: max. 4 PC/HMI/SCADA connection



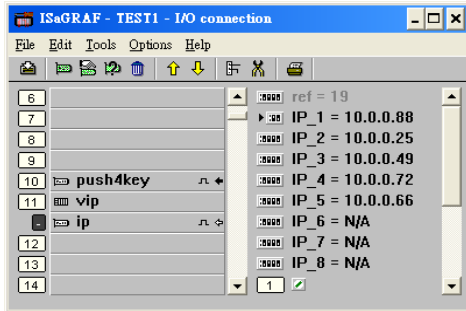
## Data-Recorder & Data-Logger

ICP DAS provides a freeware "UDLoader.exe" to load the data stored in I-8x37-80 + S256/S512 via RS-232 or Ethernet.



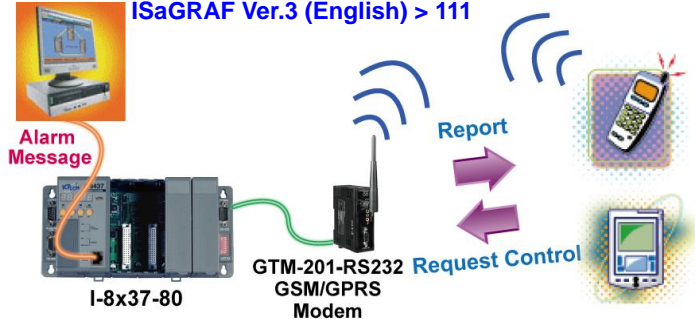
## ● VIP Communication Security

Set VIP (Very Important IP No.) for Modbus TCP/IP security.



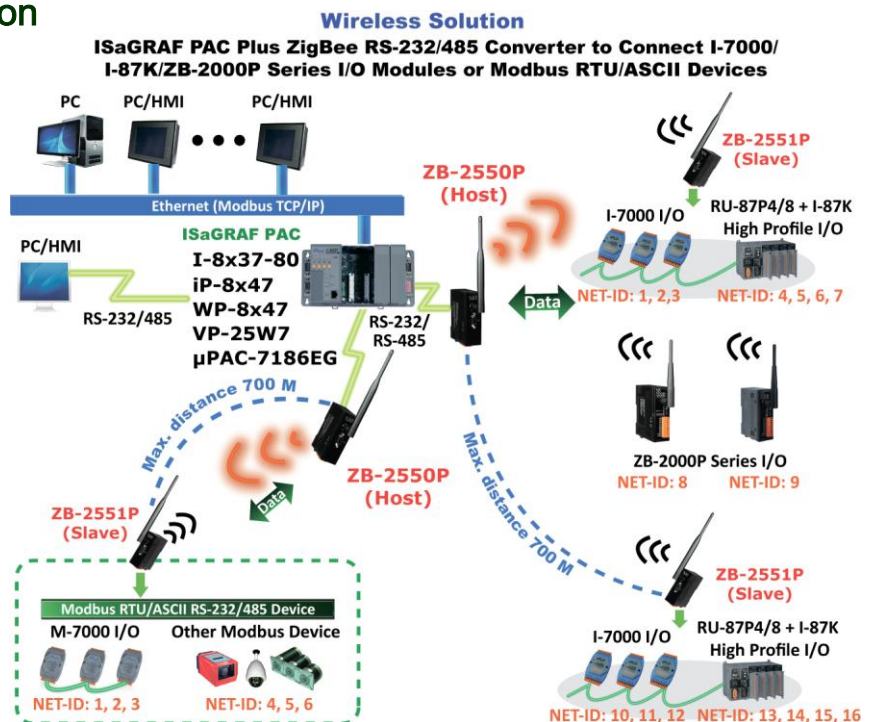
## ● SMS: Short Message Service

- Short message can be sent in local language format (like Chinese, English,.....others).
- Please refer to [www.icpdas.com](http://www.icpdas.com) > FAQ > Software > ISaGRAF Ver.3 (English) > 111



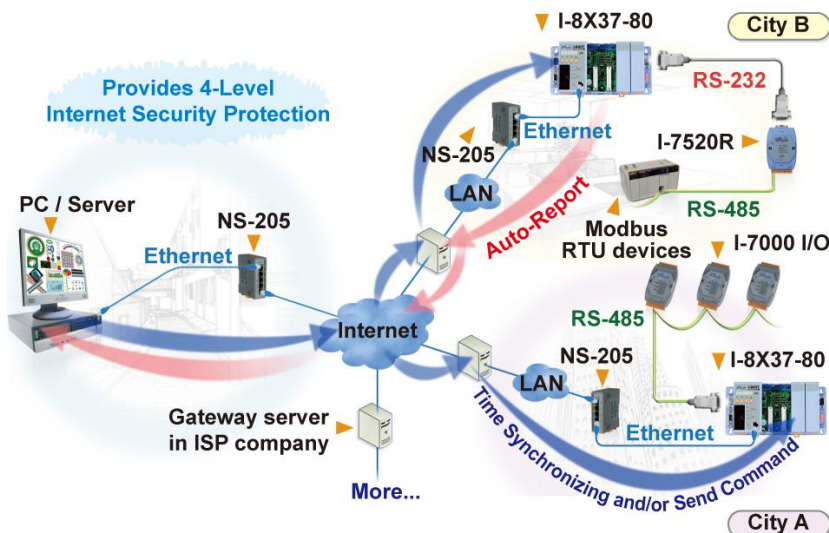
## ● ZigBee Wireless Communication

- The iP-8xx7 plus ZB-2550P and ZB-2551P RS-232/485 Converters can apply wireless communication, reduce the wiring cost, and achieve the mission of remote I/O control and data acquisition.
- Please refer to [www.icpdas.com](http://www.icpdas.com) > FAQ > Software > ISaGRAF Ver.3 (English) > 110



## ● Auto-Report Acquisition Data & Control Data

Stable and Cost-effective Data Acquisition Auto-Report System



- I-8X37-80 PAC can use UDP/IP to auto-report acquisition data & control data to local or remote internet PC/Server.

**Advantage: Every I-8X37-80 in the different location doesn't need a fixed IP.**

- Please refer to [www.icpdas.com](http://www.icpdas.com) > FAQ > Software > ISaGRAF Ver.3 (English) > 065

## ► Specifications of I-8437-80 & I-8837-80

ISaGRAF® PAC

<b>Power Supply</b>	
Protection	Power reverse polarity protection
Input Range	+10 ~ +30 Vdc
Power Consumption	20 W (when I/O slots are empty )
<b>General Environment</b>	
Temperature	Operating: -25 ~ +75 °C, Storage : -30 ~ +80 °C
Humidity	5 ~ 90 % RH (non-condensing)
<b>System</b>	
CPU	80186, 80 MHz, or compatible
Watchdog Timer	Yes
Real Time Clock	Gives hour, minute, sec, date of week, date of month, month & year (1980 ~ 2079)
SRAM	512 KB
FLASH Memory	512 KB, Erase unit is 64 KB, 100,000 erase/write cycles
NVRAM	31 bytes, battery backup, data valid up to 10 years
EEPROM	2048 bytes, retention > 100 years. 1,000,000 erase/write cycles
SMMI	5-digit 7-Seg. LED, four push buttons & three LED on the front panel. It can display message, value, input value, simulate input & output.
I/O Slots	4 empty slots for I-8437-80, 8 empty slots for I-8837-80. Accept parallel & serial I/O boards
NET ID	8-pin DIP switch to set NET ID as 1 ~ 255
<b>Serial Ports</b>	
COM1	RS-232: TxD, RxD, GND, Speed: 115200 bps max. Program downloads port.
Ethernet	10 Mbps, NE2000 compatible, 10 Base-T, Program download port.
COM3	Can be configured as RS-232 or RS-485, Speed: 115200 bps max. Program downloads port. RS-232: TxD,RxD,RTS,CTS,GND, RS-485: DATA+, DATA-,
COM4	RS-232: Full modem signals, 115200 bps max. TxD,RxD,RTS,CTS,DSR,DTR,CD,RI,GND.
<b>Development Software</b>	
ISaGRAF Version 3	IEC 61131-3 standard. Languages: LD, ST, FBD, SFC, IL & FC
Max. Code Size	Accept max. 64 KB ISaGRAF code size (Appli.x8m must < 64 KB)
<b>Motion Control</b>	
	Integrate with one I-8091(2-axis) or two I-8091(4-axis) to do motion control. When doing motion control, the Ethernet communication is not available.
<b>PWM Output</b>	
Pulse Width Modulation Output	8-ch max. for one controller. 500 Hz max. for Off=1 & On=1 ms Output square curve: Off: 1 ~ 32767 ms, On: 1 ~ 32767 ms Optional D/O boards: I-8037, 8041, 8042, 8054, 8055, 8056, 8057, 8060, 8063, 8064, 8065, 8066,8068, 8069 (Relay Output boards cannot generate fast square pulse)
<b>Counters</b>	
Parallel DI Counter	8-ch max. for 1 controller. Counter val: 32-bit. 500 Hz max. Min. ON & OFF width must >1ms Optional DI boards: I-8040, 8042, 8051, 8052, 8053, 8054, 8055, 8058, 8063, 8077
Serial DI Counter	Counter input: 100 Hz max. Counter value: 0 ~ 65535 (16-bit) Optional serial I-87K DI boards: I-87040, 87051, 87052, 87053, 87054, 87055, 87058, 87063
Remote DI Counter	All remote I-7000 & I-87K DI modules support counters. 100 Hz max. value: 0 ~ 65535
High Speed Counter	I-87082: 100 kHz max. 32-bit, I-8080: 450 kHz max. 32-bit
<b>Protocols</b>	
Modbus Master Protocol	Up to 2 COM Ports (COM1,COM3,COM4 and COM5 in multi-serial port board) can support Modbus RTU/ASCII Master protocol to connect to other Modbus Slave devices
Modbus Slave Protocol	Up to 2 COM Ports (COM1 and COM3) can support Modbus RTU Slave protocol for connecting ISaGRAF, PC/HMI/OPC Server & MMI panels.
Modbus TCP/IP Protocol	Ethernet port support Modbus TCP/IP Slave protocol for connecting ISaGRAF & PC/HMI.
Remote I/O	One of COM3 or COM4 supports I-7000 I/O modules & (I-87K base + I-87K serial I/O boards or RU-87P1/2/4/8 + I-87K High Profile I/O cards) as Remote I/O. Max. 64 Remote I/O module for one controller
Fbus	Built-in COM3 Port to exchange data between ICP DAS's ISaGRAF PACs
Ebus	To exchange data between ICP DAS's ISaGRAF Ethernet PACs via Ethernet port.
SMS: Short Message Service	One of COM4 or COM5 can link to a GSM modem to support SMS. User can request data/control the controller by cellular phone. The controller can also send data & alarms to user's cellular phone. Optional GSM modems: GTM-201-RS232 (850/900/1800/1900 GSM/GPRS External Modem)
User Defined Protocol	User can write his own protocol applied at COM1, COM3, COM4 (& COM5 ~ COM20 if multi-serial port boards are plugged) by serial communication function blocks.
Modem_Link	Supports PC to remotely download & monitor the controller through a normal modem.
MMICON/LCD	One of COM3 or COM4 supports ICP DAS's MMICON. The MMICON is featured with a 240 x 64 dot LCD and a 4 x 4 Keyboard. User can use it to display picture, string, integer, float, and input a character, string, integer and float.
Redundant System	Two ISaGRAF PACs can link to Remote I-7000 & I-87K I/O modules at the same time. Only one controller is active to control these Remote I/Os. If one is dead, the other one will take over the control of Remote I/Os. Please refer to <a href="http://www.icpdas.com">www.icpdas.com</a> > FAQ > Software > ISaGRAF Ver.3 (English) FAQ. 084.
<b>Battery Backup SRAM</b>	
I-8437-80/8837-80 can support up to 1024 retain variables with a S256/S512 plug in the socket of the back-plane. Data can also be stored in the S256/S512, and then PC can load these data via COM1 or Ethernet. PC can also download pre-defined data to the S256/S512. Optional: S256: 256 KB, S512: 512 KB	



**I-8K I/O modules** : More at [www.icpdas.com](http://www.icpdas.com) > Products > PAC - 8K & 87K I/O Modules  
**Parallel I/O Modules : I-8K (Low Profile) ( I-8xxx-G : "G" means gray cover)**

**I-8K Analog I/O Modules**

I-8017HS	8-ch. Diff. or 16-ch. Single-ended, 14-bit, High Speed Analog Input Module (current input require external 125 Ω resistor)
I-8017HW	8-ch. Diff. or 16-ch. Single-ended, 14-bit, High Speed Analog Input Module (current input requires external 125 Ω resistor) .
I-8024	4-ch. Isolated Analog Output Module (+/- 10 V, 0 ~ +20 mA)

**I-8K Digital I/O Modules**

I-8037	16-ch. Isolated Open Collector Output Module
I-8040	32-ch. Isolated Digital Input Module
I-8041	32-ch. Isolated Open Collector Digital Output Module
I-8042	16-ch. Isolated Digital Input & 16-ch. Isolated Open Collector Digital Output Module
I-8051	16-ch. Non-isolated Digital Input Module
I-8052	8-ch. Differential Isolated Digital Input Module
I-8053	16-ch. Isolated Digital Input Module
I-8054	8-ch. Isolated Digital Input Module & 8-ch. Isolated Open Collector Digital Output Module
I-8055	Non-isolated 8-ch. Digital Logic Input Module & 8-ch. Open Collector Digital Output Module
I-8056	16-ch. Non-isolated Open Collector Output Module
I-8057	16-ch. Isolated Open Collector Output Module
I-8058	8-ch. Differential Isolated Digital Input Module, Max. AC/DC Input : 250 V
I-8060	6-ch. Relay Output Module, AC: 125 V @ 0.6 A ; 250 V @ 0.3A, DC: 30 V @ 2 A
I-8063	4-ch. Diff. Isolated digital input & 4-ch. Relay output module, AC : 125 V @ 0.6 A ; 250 V @ 0.3 A
I-8064	8-ch. Power Relay Output Module, AC: 250 V @ 0.3 A, DC: 30 V @ 2 A
I-8065	8-ch. SSR-AC Output Module, AC: 24 ~ 265 V <sub>rms</sub> @ 1.0 A <sub>rms</sub>
I-8066	8-ch. SSR-DC Output Module, DC: 3 ~ 30 V <sub>DC</sub> @ 1.0 A <sub>rms</sub>
I-8068	8-ch. Relay Output Module, AC: 0.5 A @ 120 V, DC: 1 A @ 30 V
I-8069	8-ch. PhotoMOS Relay Output Module, Max. AC/DC: 0.13 A @ 350 V
I-8077	8-ch. DI (Toggle switch) & 8-ch. (Programmable) DO Simulator Module

**I-8K Counter/Frequency Modules**

I-8080	4/8-ch. Counter/Frequency Module, Isolated or TTL level
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**I-8K Communication Modules**

I-8112	2-port RS-232 Module, 10-pin RJ-45
I-8114	4-port RS-232 Module, 10-pin RJ-45
I-8142	2-port RS-422/485 Module (The RS-422/485 couldn't be used simultaneously), 8-pin RJ-45
I-8144	4-port RS-422/485 Module(The RS-422/485 couldn't be used simultaneously), 10-pin RJ-45
I-8142i	2-port Isolated RS-422/485 Module(The RS-422/485 couldn't be used simultaneously), Isolated:3000 V, 10-pin RJ-45

**RS-485 Remote I-87K I/O modules** : More at [www.icpdas.com](http://www.icpdas.com) > Products > PAC - 8K & 87K I/O Modules  
**Serial I/O Modules : I-87K (High Profile)**

**I-87K Analog I/O Modules**

I-87005W	8-ch. thermistor input, 16-bit, 8 Hz (Total) and 8-ch. digital output module with Open Wire Detection
I-87013W	4-ch. , 16-bit, 10 Hz (Total), 2/3/4-wire RTD Input Module with Open Wire Detection
I-87015	7-ch. , 16-bit, 12 Hz (Total), RTD Input Module with Open Wire Detection (for short sensor distance)
I-87015P	7-ch. RTD Input Module with 3-wire RTD lead resistance elimination and with Open Wire Detection (for long sensor distance)
I-87017R	8-ch. Diff. , 16/12-bit, 10/60 Hz (Total) Analog Input Module with 240 V <sub>rms</sub> Over Voltage Protection, Range of -20 mA ~ +20 mA Requires Optional External 125 Ω Resistor
I-87017RC	8-ch. Diff. , 16/12-bit, 10/60 Hz(Total) Current Input Module
I-87017W	8-ch. Analog Input Module
I-87017W-A5	8-ch. High Voltage Input Module
I-87018R	8-ch. Thermocouple Input Module. Recommend to use the better I-87018Z.
I-87018W	8-ch. Thermocouple Input Module. Recommend to use the better I-87018Z.
I-87018Z	10-ch. Diff. , 16-bit, 10 Hz (Total), Thermocouple Input Module with 240 V <sub>rms</sub> Over Voltage Protection, Open Wire Detection, Range of +/-20 mA, 0~20 mA, 4~20 mA requires Optional External 125 Ω Resistor
I-87019R	8-ch. Diff. , 16-bit, 8 Hz (Total), Universal Analog Input Module with 240 V <sub>rms</sub> Over Voltage Protection, Open Wire Detection (V, mA, Thermocouple; Range of -20 mA ~ +20 mA need to set Jumper on board)
I-87024C	4-ch. 12-bit channel to channel isolated current output module with open-wire detection
I-87024W	4-ch. 14-bit analog output module (0 ~ +5 V, +/- 5 V, 0 ~ +10 V, +/- 10 V, 0 ~ +20 mA, +4 ~ +20 mA)
I-87028C	8-ch. 12-bit current output module



I-87K Digital I/O Modules	
I-87040W	32-ch. Isolated Digital Input Module
I-87046W	16-channel Non-Isolated Digital Input Module for Long Distance Measurement with 16-bit Counters
I-87051W	16-ch. Non-Isolated Digital Input Module
I-87052W	8-ch. Diff. , Isolated Digital Input Module
I-87053PW	16-ch. Isolated Digital Input Module with 16-bit Counters
I-87053W	16-ch. Isolated Digital Input Module
I-87053W-A5	16-ch. 68 ~ 150 Vdc Isolated Digital Input Module
I-87054W	Isolated 8-ch. DI and 8-ch. Open Collector DO Module
I-87055W	Non-Isolated 8-ch. DI and 8-ch. Open Collector DO Module
I-87057W	16-ch. Open Collector Isolated Digital Output Module
I-87058W	8-ch. 80 ~ 250 VAC Isolated Digital Input Module
I-87059W	8-ch. Differential 10 ~ 80 VAC Isolated Digital Input Module
I-87063W	4-ch. Diff. Isolated Digital Input and 4-ch. Relay Output Module. 5 A (NO)/3 A(NC) @ 5 ~ 24 Vdc ; 5 A(NO)/3 A(NC) @ 0 ~ 250 VAc
I-87064W	8-ch. Relay Output Module, 5 A (47~63 Hz) @ 0~ 250 VAc ; 5 A @ 0~ 30 VDC
I-87065W	8-ch. AC SSR Output Module, AC: 1.0 Arms @ 24 ~ 265 Vrms
I-87066W	8-ch. DC SSR Output Module , DC: 1.0 Arms @ 3 ~ 30 Vdc
I-87068W	4-ch. Form A Relay Output and 4-ch. Form C Relay Output Module Form A: 8 A @ 250 VAc ; 8 A @ 28 Vdc Form C: 5 A (NO)/3 A (NC) @ 277 VAc ; 5 A(NO )/3 A(NC) @ 30 VAc
I-87069W	8-ch. PhotoMOS Relay Output Module, Max. AC/DC: 0.13 A @ 350 V
I-87K Counter/Frequency Modules	
I-87082W	2-ch. Counter/Frequency Module, Isolated or Non-isolated Inputs

**More RS-485 Remote I/O Modules at**

I-7000 : [www.icpdas.com > Products > Remote I/O Modules/Units > I-7000 Modules > Selection Guide](http://www.icpdas.com > Products > Remote I/O Modules/Units > I-7000 Modules > Selection Guide)

M-7000 : [www.icpdas.com > Products > Remote I/O Modules/Units > M-7000 Modules > Selection Guide](http://www.icpdas.com > Products > Remote I/O Modules/Units > M-7000 Modules > Selection Guide)

**More FRnet Remote I/O Modules at**

FRnet I/O: [www.icpdas.com > Products > Remote I/O Modules/Units > FRnet Remote I/O Modules > Selection Guide](http://www.icpdas.com > Products > Remote I/O Modules/Units > FRnet Remote I/O Modules > Selection Guide)

**More RS-485 Remote Hot-Swap Expansion Unit at**

RU-87P1/2/4/8 : [www.icpdas.com > Products > Remote I/O Modules/Units > RS-485 Remote I/O Unit > Selection Guide](http://www.icpdas.com > Products > Remote I/O Modules/Units > RS-485 Remote I/O Unit > Selection Guide)

**More RS-485 Remote Expansion Unit at**

I-87K1/4/5/8/9: [www.icpdas.com > Products > Remote I/O Modules/Units > RS-485 Remote I/O Unit > Selection Guide](http://www.icpdas.com > Products > Remote I/O Modules/Units > RS-485 Remote I/O Unit > Selection Guide)

► Ordering Information

Ethernet ISaGRAF PAC	I-8437-80 (blue) I-8437-80-G (gray)	4 slots Faster CPU (80 MHz) Ethernet ISaGRAF PAC
	I-8837-80 (blue) I-8837-80-G (gray)	8 slots Faster CPU (80 MHz) Ethernet ISaGRAF PAC

SRAM	S256/S512	256 KB/512 KB Battery Backup SRAM
Application Software	ISaGRAF-256-E ISaGRAF-256-C	ISaGRAF Workbench Software Ver.3 (256 I/O Tags) + One English/Chinese Application Book + One USB Dongle
	ISaGRAF-32-E ISaGRAF-32-C	ISaGRAF Workbench Software Ver.3 (32 I/O Tags) + One English/Chinese Application Book
Application Book	ISaGRAF Book-E	ISaGRAF Application Book (English)
	ISaGRAF Book-C	ISaGRAF Application Book (Traditional Chinese)
Ethernet Switch	NS-205/NS-208	Unmanaged 5-port/8-port Industrial 10/100 Base-T Ethernet Switch with Plastic Case (RoHS)

**Note:** No upgrade service from ISaGRAF-32 to ISaGRAF-256.

