

W-8347 :



- ISaGRAF Ver. 3 SoftLogic Inside
- Support IEC 61131-3 + Flow Chart
- Windows CE.NET 4.1 Inside
- Intel Strong ARM CPU, 206 MHz
- SRAM:64 MB, Flash:32 MB
- VGA Resolution: 1024*768
- I/O Slot: 3/7
- Support Microsoft EVC++4.0 & VS.NET 2003

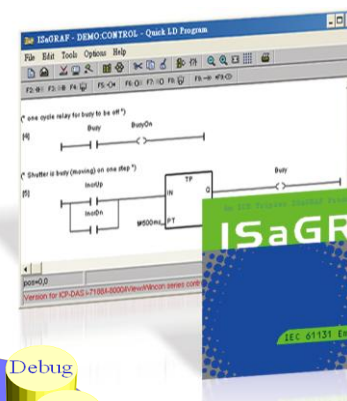
W-8747 :



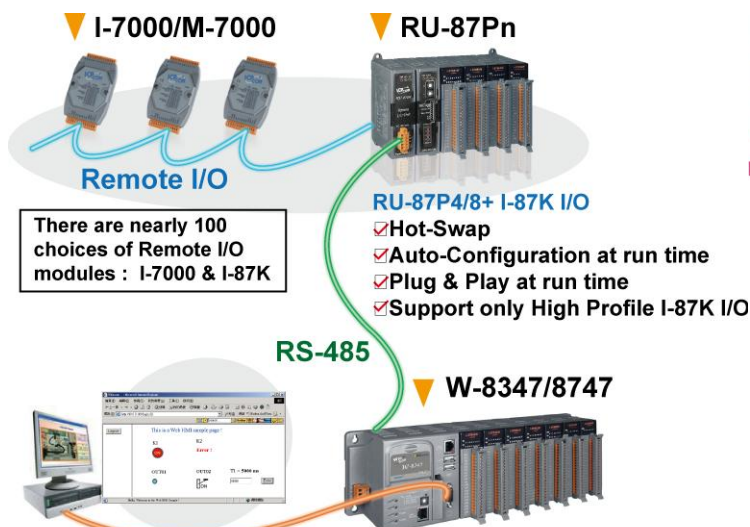
The WinCon-8347/8747 series is a Dual-LAN PAC and includes ISaGRAF SoftLogic. It has dual Ethernet 10/100M ports, dual USB host ports, one RS-232 port and one RS-485 port. The user can choose *Local I/O modules* : I-8K/I-87K I/O modules and *RS-485 Remote I/O modules* : I-7000 or expansion units (I-87Kn or RU-87Pn) plugged with I-87K serial I/O modules.

The ISaGRAF PAC supports ISaGRAF Ver.3 Workbench :

- 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

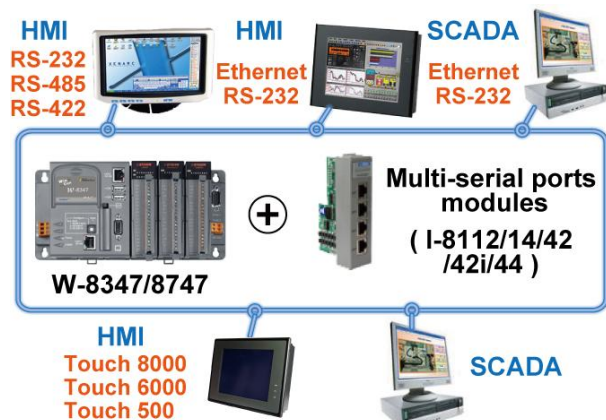


● Remote I/O Application

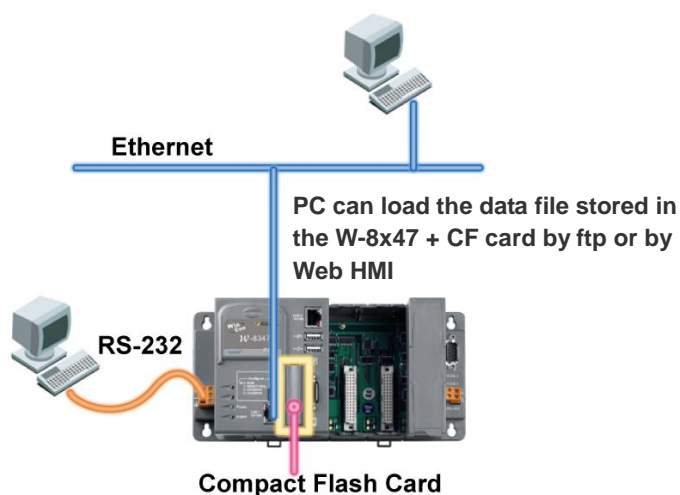


● Modbus RTU/TCP Slave Ports

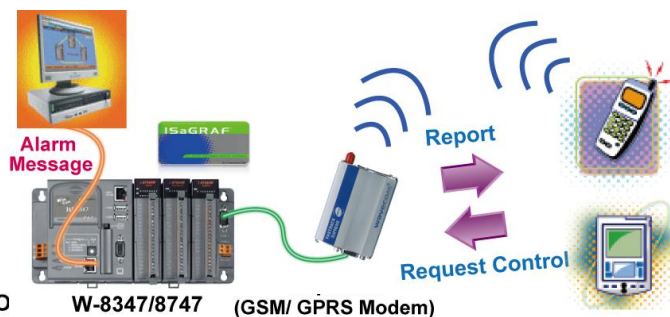
- **Modbus RTU (RS-232/485/422):** max. **5** PC/HMI/SCADA connection
 - **Modbus TCP/IP:** max. **32** PC/HMI/SCADA connection
- More at www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) - 095



● Data-Recorder & Data-Logger



● SMS: Short Message Service



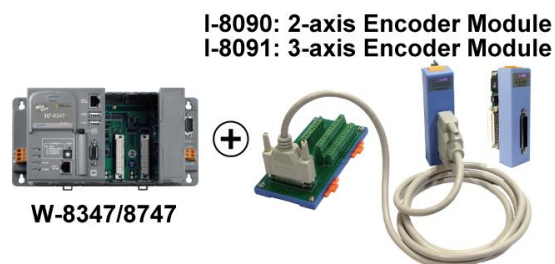
● Modbus Master (RTU, ASCII, RS-232/485/422)

- COM2:RS-232 or COM3:RS-485
- COM5~COM14: if I-8112/14/42/42i/44 in Slot 1~5
- Can Link to Modbus PLC or M-7000 I/O or Modbus devices (Power meter, temperature controller, inverter etc.)



● Motion Control

- One I-8091 can control 2-axis: X-Y plane, or 2-axis independent
- Two I-8091 can control 4-axis: X-Y plane + 2-axis independent, or 4-axis independent

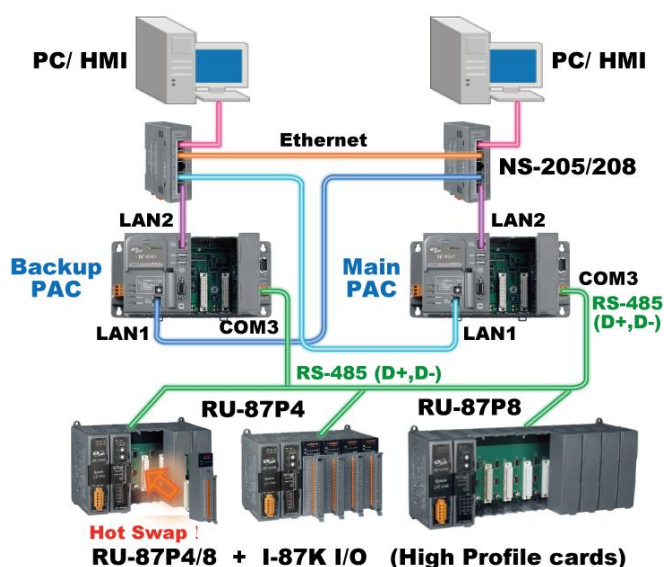


● Communicate With Other TCP/IP Server device



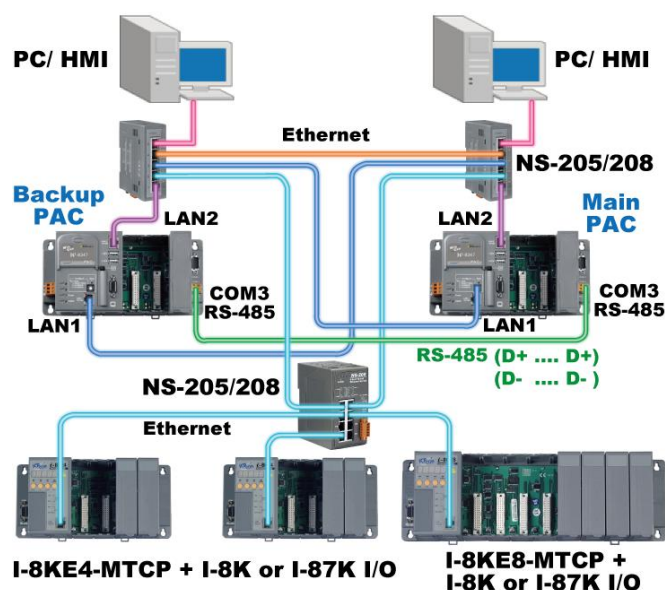
● New Hot-Swap and Redundant System

- If one Ethernet cable of W-8347/8747 is broken or damaged, the other one will still work.
- If one controller is dead, the other one will take over the control of the RS-485 I/O.
- PC/HMI can connect to this redundant system by one or two active IP.
- More at www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) - 093



● New Redundant System with Ethernet I/O

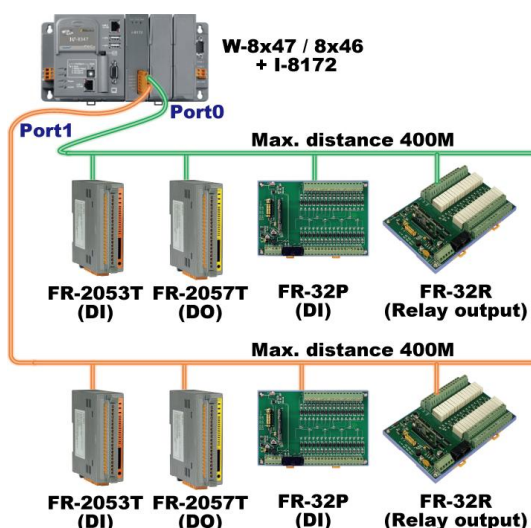
- If one Ethernet cable is broken or damaged, the other one will still handle the Ethernet I/O and exchange data with the other redundant controller.
- The scan of Ethernet I/O is much faster than that of RS-485 I-7000 or I-87K I/O.
- More at www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) - 093, 042



● Fast FRnet Remote I/O

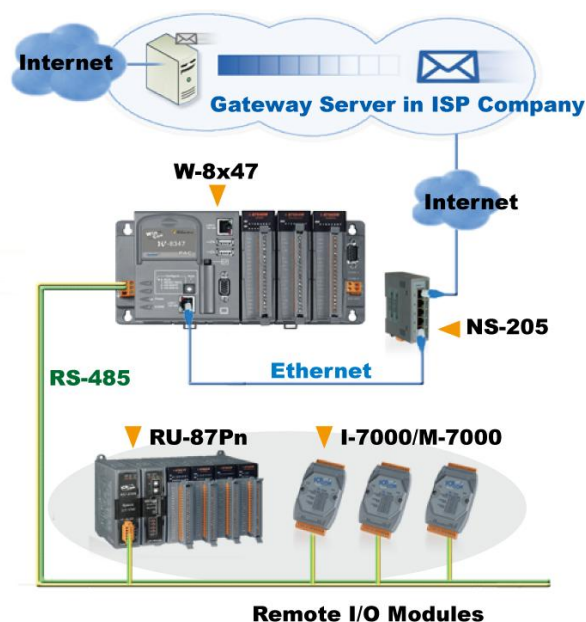
Advantage of FRnet I/O:

- Fast I/O scan: About 3ms per FRnet scan (This depends on your ISaGRAF PLC program 's scan time, If the ISaGRAF PLC scan Time is 9ms, then the scan time for all will be 9 ms, not 3ms)



Note: FRNET I/O not supporting AI & AO

● Send Email with One Attached File



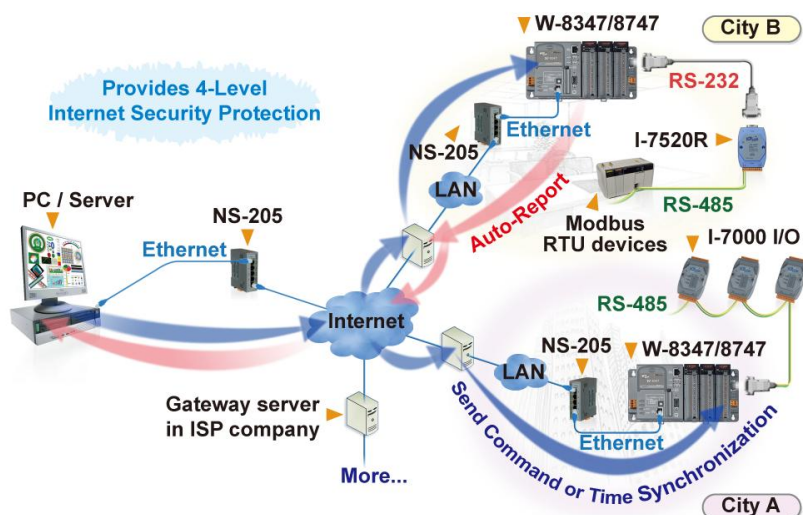
More at www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) - 067

● Auto-report Acquisition Data & Control Data

W-8347/8747 can use UDP/IP Client to auto-report acquisition data & control data to local or remote internet PC/Server.

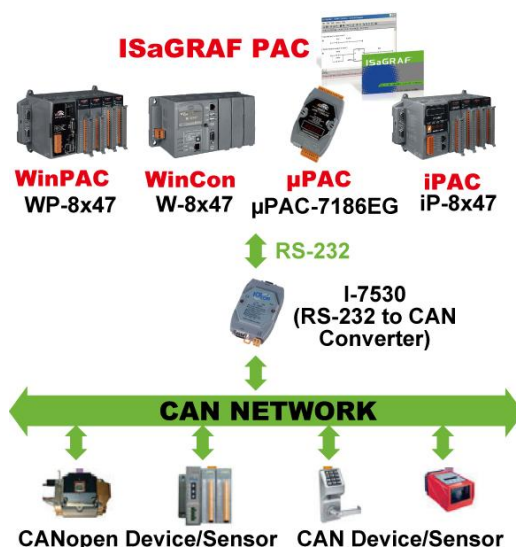
Advantage : Every WinCon in the different location doesn't need a fixed Internet IP

Stable and Cost-effective Data Acquisition Auto-Report System

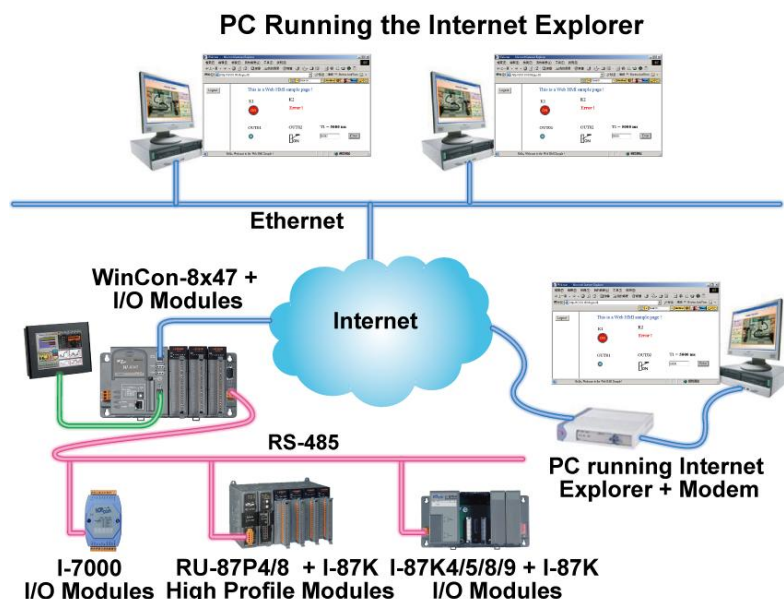


● Integrate with CAN/CANopen Devices and Sensors

- W-8XX7 Supports max. 10 I-7530 (RS-232 to CAN Converter)
- Please refer to www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) > 086

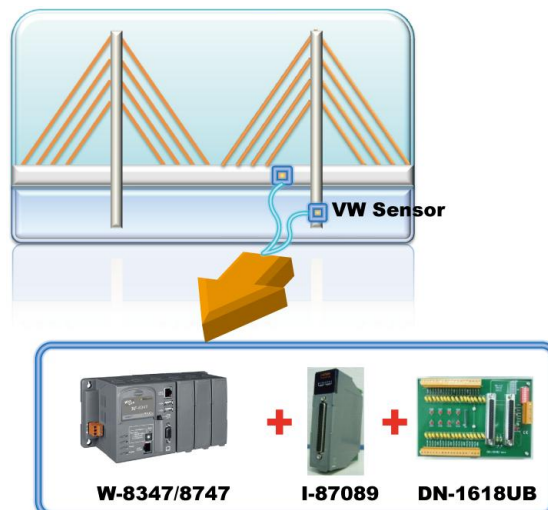


● Multiple Web HMI – Monitor & Control Everywhere!



● Stress Monitoring Application of Constructions

More at www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) - 091



► Specifications of WinCon-8347/ 8747 **ISaGRAF® PAC**

Power Supply	
Power Requirements	10 ~ 30 Vdc (unregulated), 20W (when I/O slots are empty)
Protection	Built-in power protection & network protection circuit
General Environment	
Temperature	Operating: -25 °C ~ +55 °C, Storage : -30 °C ~ +85 °C
Humidity	5 % ~ 95 % RH (non-condensed)
System	
CPU & Watchdog Timer	Intel Strong ARM CPU, 206 MHz, or compatible. Watchdog: Yes
Real Time Clock	Gives hour, minute, sec, date of week, date of month, month & year
SRAM & FLASH Memory	SRAM: 64 MB, FLASH Memory: 32 MB for OS image
Compact Flash Card	One Compact Flash slot: CF memory card is 128 MB or more
EEPROM	16 KB, retention > 100 years. 1,000,000 erase/write cycles
I/O Slots	I/O slots: W-8347: 3 , W-8747: 7, accept I-8K parallel & I-87K serial I/O boards
VGA Port	1 VGA port: resolution: 320x240x16 to 1024x768x16, default is 640x480x16
Two USB Port	Two USB 1.1 Host ports for USB mouse, keyboard or USB drive
Reset Button, LED, NET ID	1 reset button & 1 power LED. NET ID: From 1 ~ 255, set by software
Unique Serial Number	64-bit hardware unique serial number
Serial Ports	
COM1	Internal use for I-87K serial I/O boards of W-8347 & W-8747.
COM2	RS-232: full modem signals, Speed: 115200 bps max.
COM3	RS-485, Speed: 115200 bps max. D+, D-
Two Ethernet Ports	LAN1 & LAN2, 10/100 Mbps, NE2000 compatible, 10 Base-T, Program download port. Please use NS-205/NS-208 Industrial Ethernet Switch.
Development Software	
ISaGRAF Version 3	IEC 61131-3 standard. Languages: LD, ST, FBD, SFC, IL & FC
Max. Code Size	W-8347/8747 accepts max. 1 MB ISaGRAF code size (Appli.x8m must < 1 MB)
Non-ISaGRAF	Options: Microsoft EVC++4.0 or VS.NET 2003 (VB.NET 2003, C#.NET 2003)
Web HMI	
HMI	Supports Web HMI function, PC running Internet Explorer can access to the WinCon-8347/8747 via local Ethernet or Internet or dial Modem, monitoring and control.
Security	Web HMI supports three level username and password protection
Motion	
	W-8347/8747 integrate with one I-8091(2-axis) or two I-8091(4-axis) can do motion control
PWM Output	
Pulse Width Modulation	8-ch. max. 250 Hz max. For Off=2 & On=2 ms . Output square curve: Off: 2 ~ 32766 ms, On: 2 ~ 32766 ms. Optional D/O boards: I-8037, 8041, 8042, 8054, 8055, 8056, 8057, 8060, 8063, 8064, 8065, 8066, 8068, 8069 (Relay boards cannot generate fast square pulse)
Counters	
Parallel DI Counter	8-ch. max. For 1 controller. Counter val: 32-bit. 250 Hz max. Min. ON & OFF width must > 2ms. 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-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
Protocols	
Modbus RTU/ASCII Master (multi-port)	Supports multi-ports of Modbus RTU/ASCII Master protocol to connect to other Modbus Slave devices. COM2, COM3, (or COM4 ~ COM14 if I-8112/8114/8142/8144 is found) Max. 10 ports
Modbus RTU Slave Protocol	Up to 5 COM Ports (one of COM2, 3 and 5, 6, 7, 8) can support Modbus RTU Slave protocol for connecting ISaGRAF, PC/HMI/OPC Server & HMI panels.
Modbus TCP/IP Protocol	Ethernet port supports Modbus TCP/IP Slave protocol for connecting ISaGRAF & PC/HMI.
Web HMI Protocol	Ethernet port for connecting PC running Internet Explorer
I-7000 & I-87K Remote I/O	COM3 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. 255 I-7000/87K Remote I/O modules for one controller
M-7000 Series Modbus I/O	Max. 10 RS-485 ports – COM3 & (COM5 ~ COM14 if I-8142/8142i/8144 is found) can support M-7000 series Modbus I/O. Each port can connect up to 32 M-7000 Modules.

► Specifications of WinCon-8347/ 8747 ISaGRAF® PAC

Modbus TCP/IP I/O	LAN2 supports ICP DAS Ethernet I/O : I-8KE4-MTCP and I-8KE8-MTCP listed at www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) FAQ-042. If LAN2 is break, it will switch to LAN1 automatically to continuously work. (This need LAN1 & LAN2's IP are set in the same IP domain)
FRnet I/O	W-8xx7 can support max 7 pcs. I-8172 boards in slot 1 ~ 7 to connect to FRnet I/O modules, like FR-2053, FR-2057 FR-32R, FR-32P, at www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) FAQ-048. Each I-8172 board can connect up to 256 DI plus 256 D/O channels.
Send Email	Supports mail_snd and mail_set functions to send email with one attached file via Ethernet port.
Ebus	To exchange data between ICP DAS's ISaGRAF Ethernet PACs via Ethernet port.
SMS: Short Message Service	One of COM2 (or COM5 if I-8112 is found) 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: Supreme (850/900/1800/1900 GSM/GPRS External Modem)
User Defined Protocol	User can write his own protocol applied at COM2, COM3, (& COM4 ~ COM14 if multi-serial port boards are plugged) by serial communication function blocks.
Modem_Link	COM2 Supports PC to remotely download & monitor the controller through a normal modem.
MMICON/LCD	COM2 (or COM5 if I-8112/8114 is found) supports ICP DAS's MMICON. The MMICON is featured with a 240 x 64 dot LCD & a 4 x 4 Keyboard to display picture, string, integer, float, & input a char, string, integer & float.
UDP Server & UDP Client (Exchange Message & Auto-report)	LAN1 or LAN2 support UDP Server and UDP Client protocol to send/receive message to/from PC/HMI or other devices. For example, to automatically report data to InduSoft 's RXTX driver.
TCP Client (Exchange Message & Auto-report)	LAN1 or LAN2 support TCP Client protocol to send/receive message to/from PC/HMI or other devices which support TCP Server protocol. For example, to automatically report data to InduSoft 's RXTX driver, or to connect a location camera.
New Hot-Swap and Redundant System	This redundant system has setup two "Active IP" address point to the active W-8x47's LAN1 and LAN2 ports always. One or two or more PC/HMI/SCADA can communicate with this redundant system via one of the two given active IP. So the PC/HMI/SCADA can access to the system easily without any notice about which W-8x47 is currently active. Moreover, the new redundant system can integrate with the RU-87P4 and RU-87P8 expansion unit plus the I-87K high-profile I/O cards to support the hot-swap application. If the I/O card is damaged, the maintenance person just takes one good-card with same model name to hot-swap the damaged one without stopping this redundant system. Please refer to www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) FAQ-093.
CAN/CANopen	W-8xx7 can use its COM2 or COM5 ~ COM14 (resides at the I-8112/8114 RS-232 expansion board) to connect one I-7530 : the RS-232 to CAN converter to support CAN and CANopen devices and sensors. One W-8xx7 supports max.10 RS-232 ports to connect max.10 I-7530. Please refer to www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) FAQ-086.
Battery Backup SRAM	
W-8347/8747 supports up to 4096 retain variables with a S256/S512 plug in the socket of the new back-plane (ver. 3-slot:2.6 , 7-slot:2.8). Optional: S256: 256 KB, S512: 512 KB	

► I/O Modules Selection Guide ISaGRAF® PAC

I-8K I/O Modules : More at 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-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-8K Digital I/O Modules

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 @ 0.3 A, 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 _{rms} @ 1.0 Arms
I-8066	8-ch. SSR-DC Output Module, DC: 3 ~ 30 V _{dc} @ 1.0 Arms
I-8068	8-ch. Relay Output Module, AC: 120 V @ 0.5 A, DC:30 V @ 1 A
I-8069	8-ch. PhotoMOS Relay Output Module, Max. AC/DC: 350 V @ 0.13 A
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), Isolation:3000 V, 10-pin RJ-45

RS-485 Remote I-87K I/O Modules : More at 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 _{rms} 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 _{rms} 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 _{rms} 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-87041W	32-ch. Sink Type Open Collector Isolated Digital Output 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 V _{dc} 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 V _{ac} Isolated Digital Input Module

► I/O Modules Selection Guide **ISaGRAF® PAC**

I-87K Digital I/O Modules	
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

M-7000 : 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

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

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

► Ordering Information

ISaGRAF PAC	W-8347 (blue) W-8347-G (gray)	3-slot Ethernet ISaGRAF PAC (Dual-LAN: 10/100 Mbps)
	W-8747 (blue) W-8747-G (gray)	7-slot Ethernet ISaGRAF PAC (Dual-LAN: 10/100 Mbps)

► Optional Accessories

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: ISaGRAF-32-E, ISaGRAF-32-C can't upgrade to 256 I/O tags!