



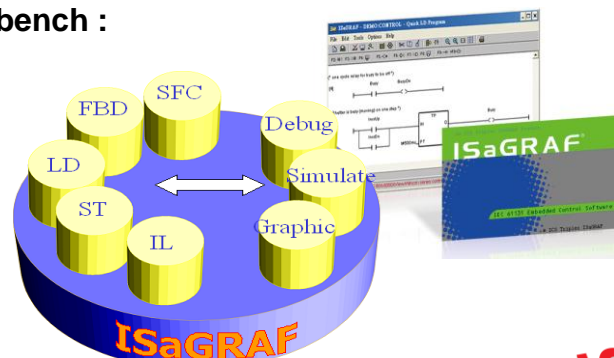
- VGA port x 1 , Max. Resolution :  
WP-8x37 : 1024 x 768  
WP-8x47 : 800 x 600
- USB port : WP-8x37 x 2  
USB port : WP-8x47 x 1
- ISaGRAF Ver.3 SoftLogic Inside
- Support IEC 61131-3 Standard
- Windows CE 5.0 Inside  
.NET Compact Framework 2.0
- Support Microsoft  
Visual Basic.NET 2003/2005/2008,  
Visual C#.NET 2003/2005/2008,  
EVC++ 4.0
- Powerful PXA270 CPU:  
32-bit & 520 MHz or Compatible
- SDRAM: 128 MB, FLASH: 96 MB↑
- Dual Battery Backup SRAM: 512 KB
- microSD Card: 1 GB
- I/O Slots: 1 / 4 / 8 Slot(s)  
Hot-Swap I-87K High Profile Card
- RS-232/485 Serial Comm. Ports:  
WP-81x7 x 2, WP-84x7/88x7 x 4
- Dual Ethernet Ports
- Redundant Power Inputs,  
Dual-WinPAC Redundant System
- Support eLogger HMI

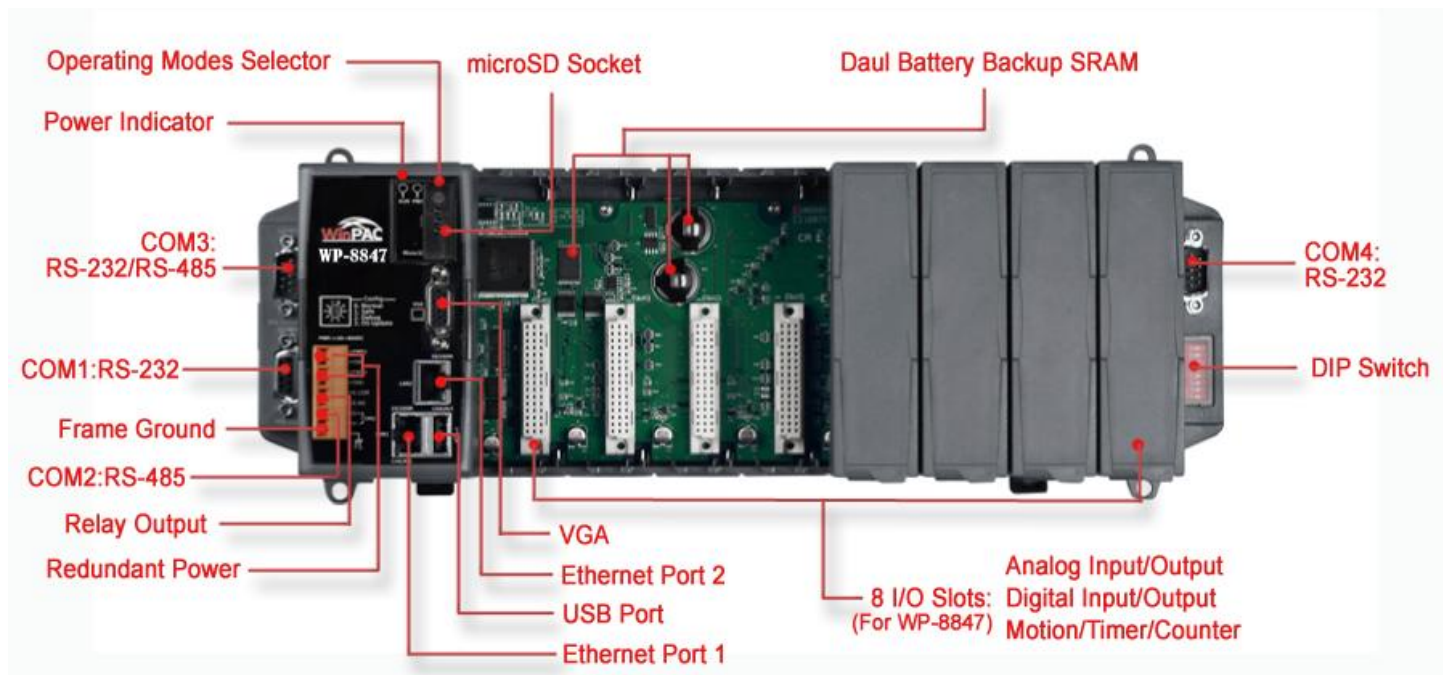


**WinPAC-8xx7 Series (WP-8137/8437/8837/8147/8447/8847)** is the new generation WinCE 5.0 based ISaGRAF PAC (Programmable Automation Controller) of ICP DAS. WP-8xx7 is equipped with a PXA270 CPU (520 MHz) running Windows CE 5.0 Operating System, various connectivity including 10/100 Base-TX Dual Ethernet Ports, 2 or 4 RS-232/RS-485 ports, 1 VGA, 1 or 2 USB ports, and 1/4/8 slots for high performance Parallel-type I/O modules (High Profile I-8K Series) and Serial-type I/O modules (Hot-Swap High Profile I-87K I/O modules), etc. Memories come with 128 MB SDRAM, 512 KB dual battery backup SRAM, 96 or 128 MB FLASH & 1 GB microSD card. For redundant supporting: redundant power inputs, dual Ethernet Ports, dual battery backup SRAM & dual Watchdog Timers. WinPAC will upgrade your control systems!

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

- IEC 61131-3 Standard Open PLC Programming Languages + Flow Chart(FC) :
  1. LD
  2. FBD
  3. SFC
  4. ST
  5. IL
  6. FC
- Auto-Scan I/O
- On-line debugging / control / monitoring
- Off-line simulation
- Simple graphic HMI





## Hardware Features:

- ☑ **Powerful CPU Module**
  - PXA270 CPU: 32-bit & 520 MHz or compatible
- ☑ **Rich Memories**
  - EEPROM : 16 KB
  - SDRAM : 128 MB
  - Dual battery backup SRAM : 512 KB
  - FLASH : 128 or 96 MB
  - microSD card : 1 GB  
(support max. 16 GB microSDHC card)
- ☑ **Dual Battery-Backup SRAM (512 KB)**
  - Retain the data for 5 years while power off
- ☑ **Dual Watchdog Timers Increase Reliability**
  - OS Watchdog / AP Watchdog
- ☑ **Redundant Power Inputs**
  - Prevent from failing by one of the power loss
- ☑ **64-bit Hardware Serial Number**
  - Unique & protecting software & applications
- ☑ **I/O Module Hot-Swap Ability**
  - Plug & play for I-87K High Profile I/O Card
- ☑ **Rich I/O Expansion Ability**
  - RS-232/485/422
  - Ethernet
  - FRnet
  - CAN
- ☑ **Dual Ethernet Ports (10/100M)**
  - Redundant Ethernet communication
  - Separate systems:  
Global Internet / private Ethernet
- ☑ **Built-in VGA, USB Ports**
- ☑ **Ventilated Housing Design Allows Operation Between -25°C ~ +75°C**

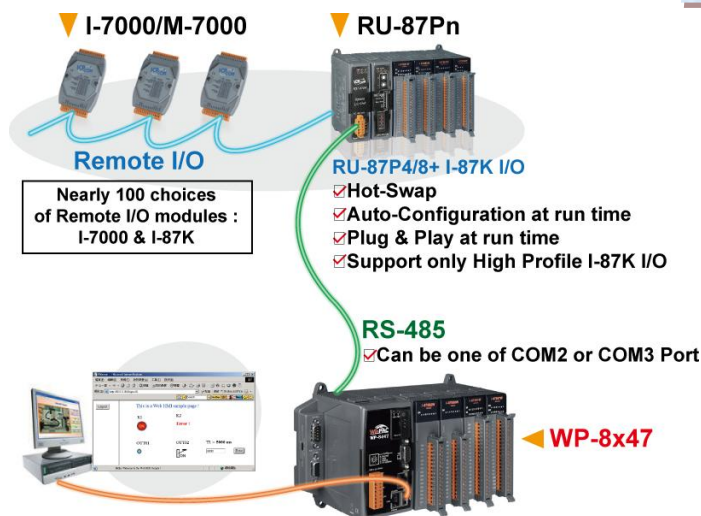


## Software Features:

- ☑ **Development Software: ISaGRAF Ver.3**
  - ISaGRAF Version 3
  - Running on Windows 95/98/NT/2000/XP
  - All-in-one design environment
  - Provide **6** PLC syntaxes  
(5 IEC 61131-3 Standard + 1 Flow Chart)
  - Max. **1 MB** ISaGRAF code size
  - Support off-line simulation
  - On-line debugging, monitoring and control
  - Easy integrating to HMI/SCADA/MMI
- ☑ **Windows CE.NET 5.0**
- ☑ **Support eLogger HMI**
  - Easy to design HMI + SoftLogic application
- ☑ **Modbus Master**
  - RTU, ASCII, RS-232/485/422 (Max. **10** ports)
  - Modbus TCP Master (Max. **100** devices)
- ☑ **Modbus RTU/TCP Slave**
  - Modbus RTU (RS-232/485/422) Slave (Max. **5** ports)
  - Modbus TCP/IP Slave (Max. **32** connections)
- ☑ **Data-Recorder & Data-Logger**
- ☑ **Data Exchange**
  - Ebus: Through Ethernet
  - PAC to PAC
- ☑ **CAN/CANopen**
  - Via I-7530 to connect CAN/CANopen devices
- ☑ **FRnet I/O (Via I-8172W)**
- ☑ **Motion Control**
- ☑ **Send Email with One File**
- ☑ **SMS: Short Message Service: GSM modem**
- ☑ **Wireless Communication: GPS, ZigBee & Radio**
- ☑ **Auto-report Acquisition/Control Data**
- ☑ **VW Solutions**

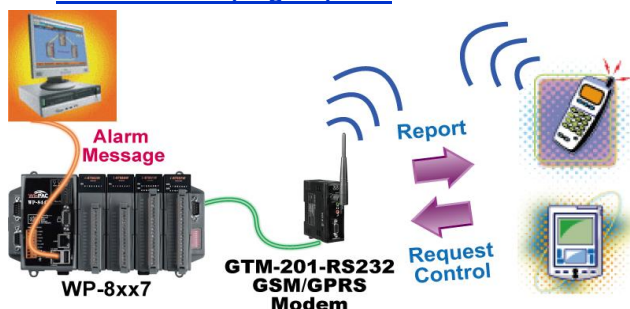


## Remote I/O Application



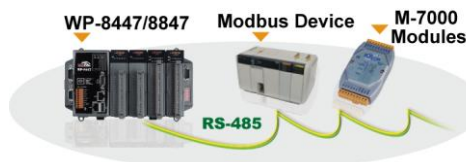
## SMS: Short Message Service

- Short message can be sent in multiple language format (like Chinese, English... others)
- More at [www.icpdas.com](http://www.icpdas.com) > FAQ > Software > [ISaGRAF Ver.3 \(English\) - 111](#)

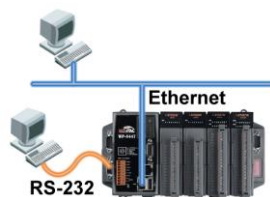


## Modbus Master : RTU, ASCII, RS-232/485/422

- Support up to **10** ports: COM1~COM4 & COM5~COM14 (if I-8112iW/ 14W/ 14iW/ 42iW/ 44iW in Slot 0~2)
- Can link to Modbus PLC or M-7000 I/O or Modbus devices (Power meter, temperature controller, inverter etc.)



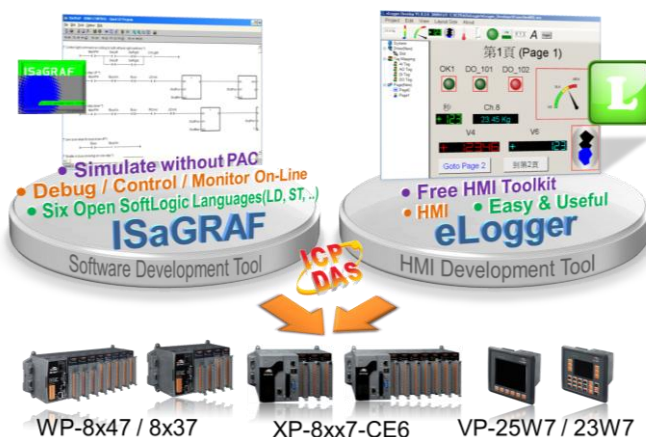
## Data-Recorder & Data-Logger



- PC can load the data file stored in the WP-8x47's Flash Disk or microSD card by ftp or by Web HMI.

## Working eLogger HMI with ISaGRAF SoftLogic

- More at [www.icpdas.com](http://www.icpdas.com) > FAQ > Software > [ISaGRAF Ver.3 \(English\) - 115](#)



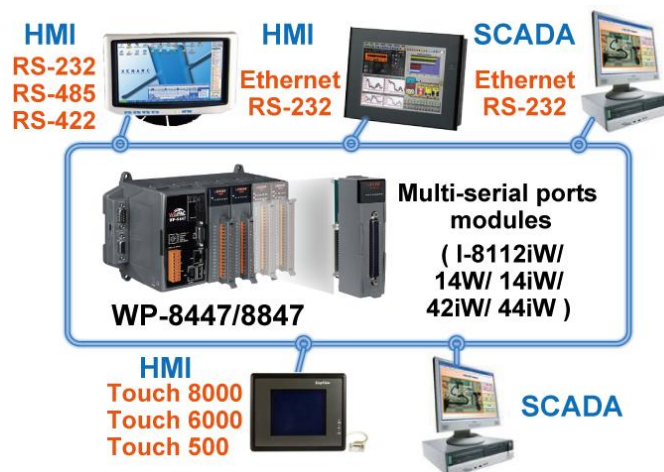
## Motion Control

- One **I-8091W** can control 2 axes: X-Y plane, or 2 axes independent
- Two **I-8091W** can control 4 axes: X-Y plane + 2 axes independent, or 4 axes independent
- Encoder Modules
  - I-8093W**: 3-axis ([FAQ-112](#))
  - I-8084W**: 4-axis, without Z-index ([FAQ-100](#))
  - I-8090W**: 3-axis



## Modbus Slave : RTU / TCP

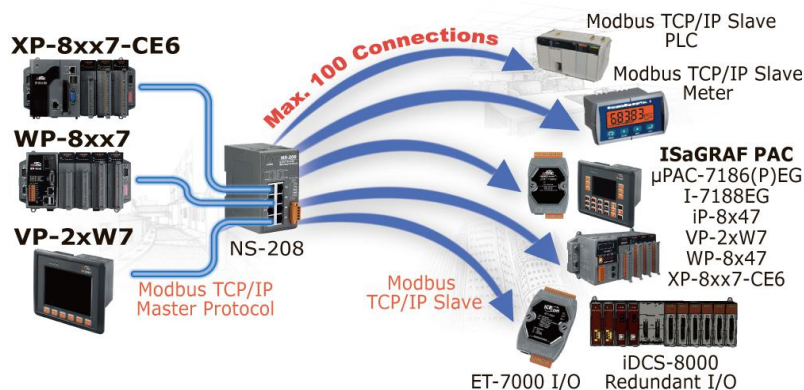
- Modbus RTU (RS-232/485/422)**: max. **5** ports
- Modbus TCP/IP**: max. **32** connections



## ● Modbus TCP/IP Master

- Each WP-8xx7 or VP-25W7/23W7 supports to link to max. 100 Modbus TCP/IP slave devices.
- Support various Standard Modbus TCP/IP Slave devices.

More at  
[www.icpdas.com](http://www.icpdas.com) > FAQ  
 > Software > ISaGRAF >  
 FAQ-113



## ● GPS applications: ISaGRAF PAC plus I-87211W or GPS-721

- For doing auto-time-synchronization and getting local Longitude and Latitude
- WP-8xx7, VP-2xW7, iP-8xx7, μPAC-7186(P)EG can support one I-87211W (slot 0~7) or I-87211W / GPS-721 as RS-485 remote GPS I/O.

More at  
[www.icpdas.com](http://www.icpdas.com) > FAQ  
 > Software > ISaGRAF  
 > FAQ-107

More GPS receivers at  
[www.icpdas.com](http://www.icpdas.com) >  
 Products > Wireless.....  
 > GPS receiver

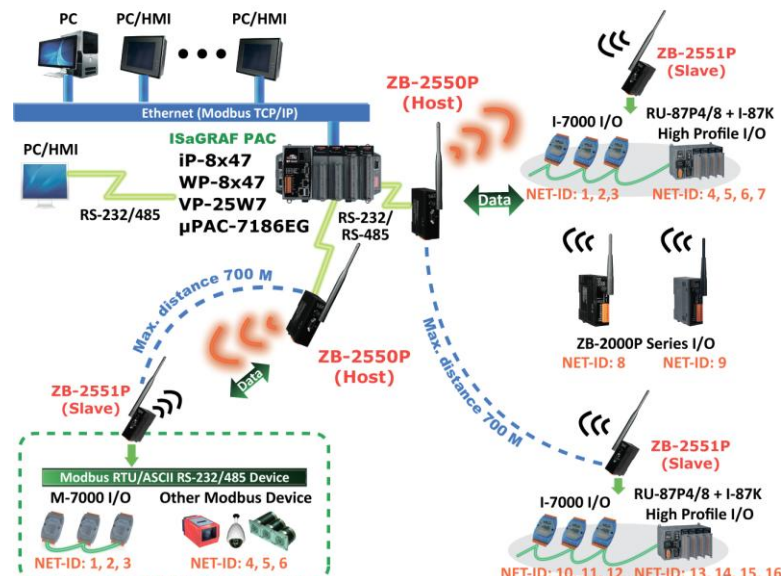


## ● ZigBee Wireless Solution

- ISaGRAF PAC plus ZB-2550P and ZB-2551P converters (ZigBee to RS-232/485)

### Wireless Solution

ISaGRAF PAC Plus ZigBee RS-232/485 Converter to Connect  
 I-7000/I-87K I/O Modules and Modbus Device

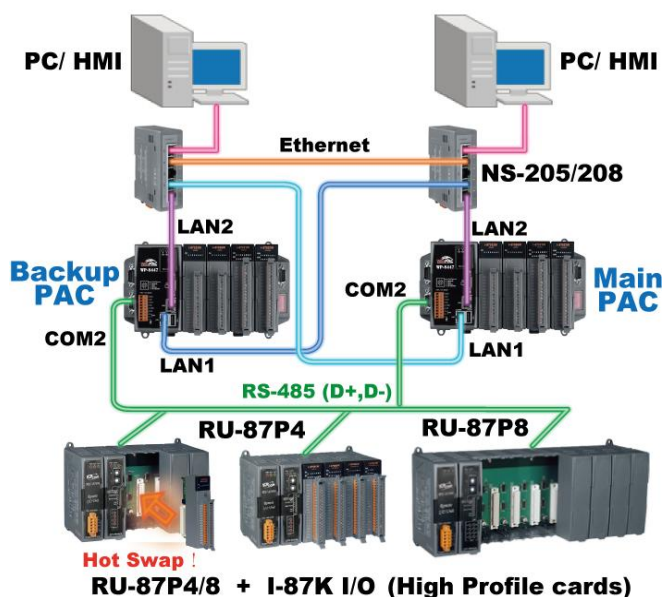


More at  
[www.icpdas.com](http://www.icpdas.com) > FAQ  
 > Software > ISaGRAF  
 > FAQ-110



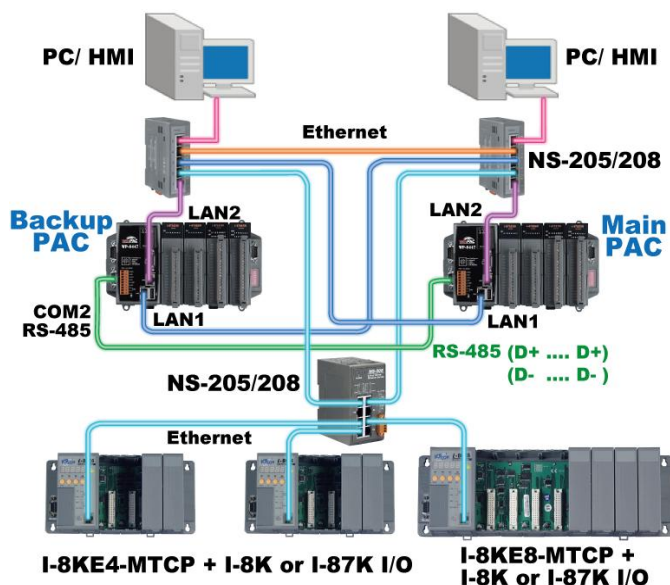
## ● New Hot-Swap and Redundant System

- If one Ethernet cable of WP-8x47 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](http://www.icpdas.com) > FAQ > Software > ISaGRAF Ver.3 (English) - 093



## ● New Redundant System with Ethernet I/O

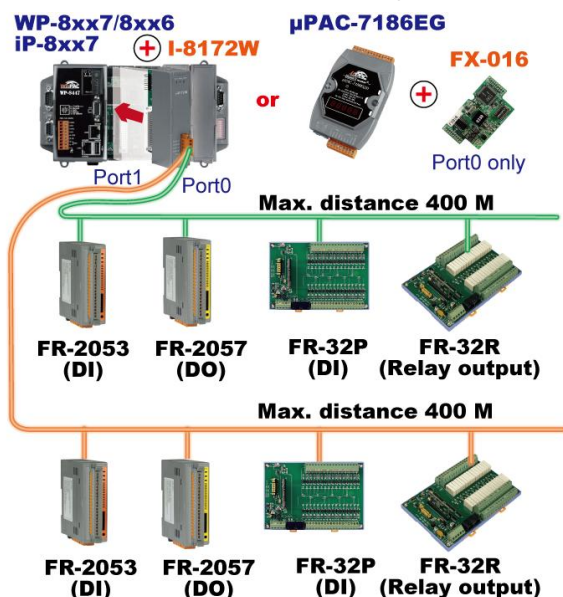
- If one Ethernet cable is broken or damaged, the other one will still handle the Ethernet I/O and exchange data with the other redundant controller.
- The scan of Ethernet I/O is much faster than that of RS-485 I-7000 or I-87K I/O.
- More at [www.icpdas.com](http://www.icpdas.com) > FAQ > Software >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



## ● Fast FRnet Remote I/O

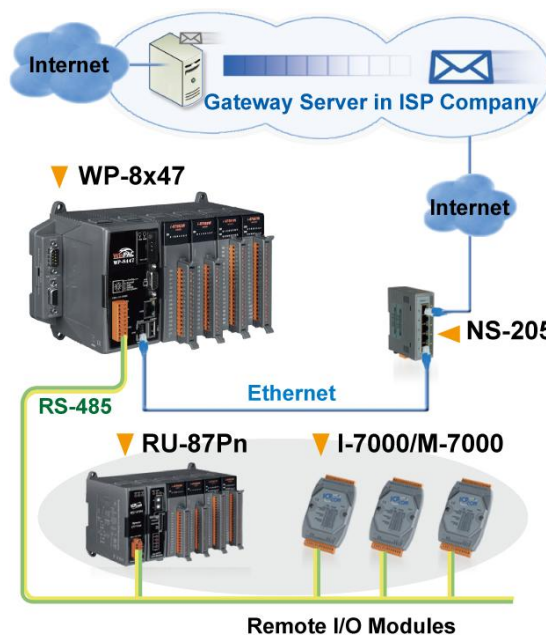
**Advantage of FRnet I/O:** Fast I/O scan time is about 3 ms/scan. (It depends on your program's PLC scan time. Ex: If the ISaGRAF program's PLC scan time is about 9 ms, then the scan time for all will be 9 ms, not 3 ms)

**Note:** FRnet I/O do not support AI & AO yet.



More at [www.icpdas.com](http://www.icpdas.com) > FAQ > Software > ISaGRAF Ver.3 (English) - 082

## ● Send Email with One Attached File



More at [www.icpdas.com](http://www.icpdas.com) > FAQ > Software > ISaGRAF Ver.3 (English) - 067

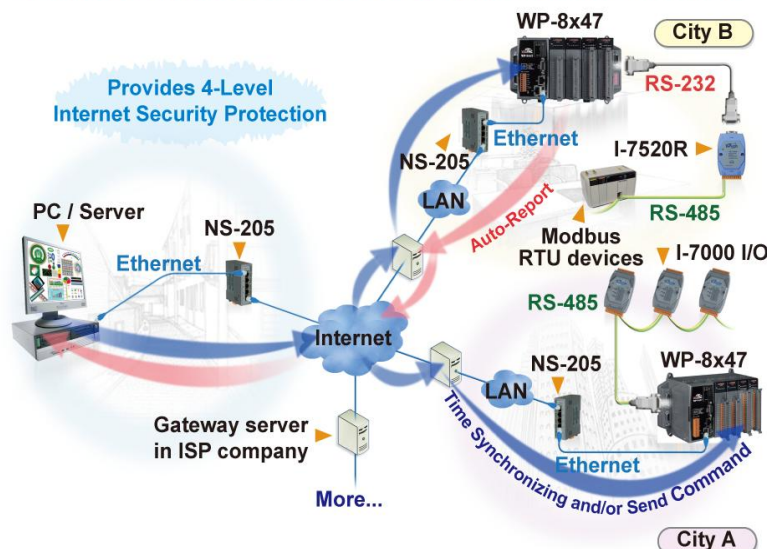
## ● Auto-report Acquisition & Control Data

WP-8447/8847 can use UDP IP Client to auto-report acquisition data & control data to local or remote internet PC/Server.

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

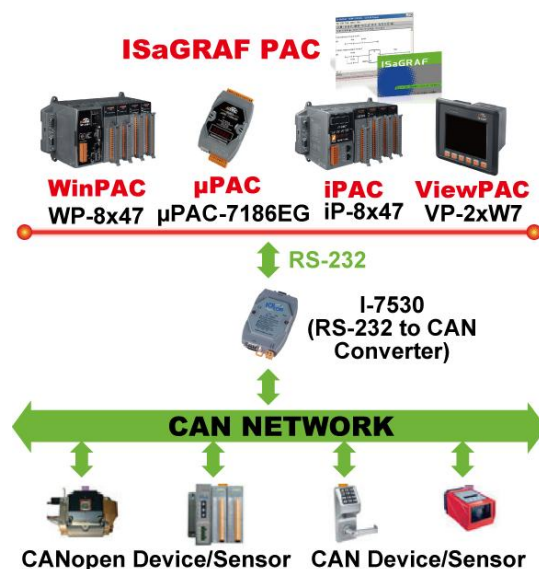
- More at [www.icpdas.com](http://www.icpdas.com) > FAQ > Software > ISaGRAF Ver.3 (English) - 065

### Stable and Cost-effective Data Acquisition Auto-Report System

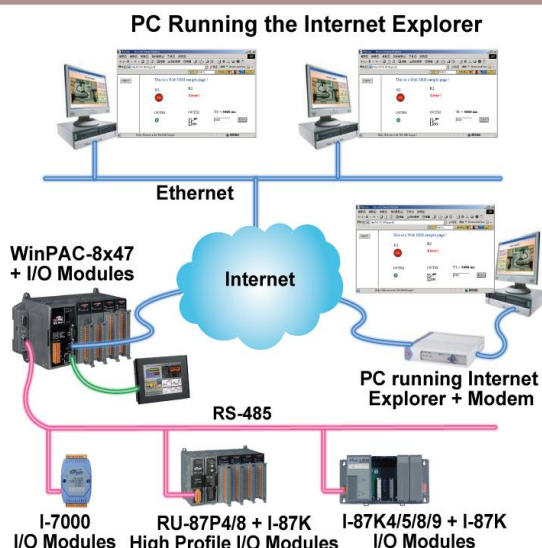


## ● Integrate with CAN/CANopen Devices & Sensors

- WP-8x47 supports max. **10** I-7530 (RS-232 to CAN Converter)
- Please refer to [www.icpdas.com](http://www.icpdas.com) > FAQ > Software > ISaGRAF Ver.3 (English) > 086



## ● Multiple Web HMI – Monitor & Control Everywhere!

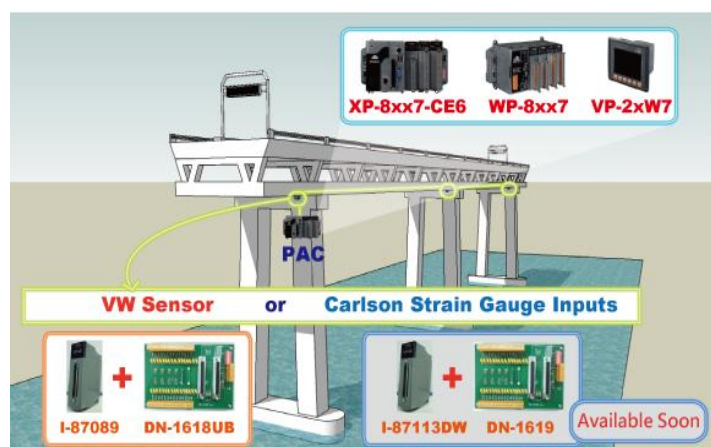


## ● Communicate With Other TCP/IP Server or UDP Client/Server Devices



## ● Stress Monitoring Application of Constructions

- ICP DAS provides useful "VW Sensor" (Vibration Wire solution) and "Carlson Strain Gauge Inputs" solution for measuring the stress of constructions.
- Each ISaGRAF PAC (as FAQ-091) supports the I-87089 (the VW master card) plus the DN-1618UB (daughter board) to achieve the "VW Sensor" application.
- Each XP-8xx7-CE6, WP-8xx7 or VP-25W7/23W7 supports the I-87113DW module (the master card of Carlson Strain Gauge Inputs) plus the DN-1619 (DN-1618U-Test1) (daughter board) to achieve the "Carlson Strain Gauge Inputs" application.
- More at [www.icpdas.com](http://www.icpdas.com) > FAQ > Software > ISaGRAF Ver.3 – FAQ-091 and FAQ-128





Models	WP-8137	WP-8147	WP-8437	WP-8447	WP-8837	WP-8847
■ System Software						
OS	Windows CE 5.0					
.Net Compact Framework	2.0					
Embedded Service	FTP server, Web server					
■ Development Software						
ISaGRAF Software	ISaGRAF Version 3 : IEC 61131-3 standard. Languages: LD, ST, FBD, SFC, IL & FC					
Max. Code Size	Accept max. 1 MB ISaGRAF code size (Appli.x8m must < 1 MB)					
Non-ISaGRAF	Options: Microsoft EVC++ 4.0 or VS.NET 2003/2005/2008 (VB.NET2003/2005/2008, C#.NET 2003/2005/2008)					
■ Web Service						
Web HMI	Support Web HMI function, PC running Internet Explorer can access to the WP-8xx7 via local Ethernet, Internet or dial Modem to monitor and control.					
Security	Web HMI supports three levels username and password protection. (high/middle/low)					
■ Power Supply						
Input Range	+10 ~ +30 V <sub>DC</sub>					
Isolation	1 kV					
Redundant Power Inputs	Yes, with one power relay (1 A @ 24 V <sub>DC</sub> ) for alarm					
Capacity	WP-8137/47: 1.0 A, 5 V supply to CPU and backplane; 0.6 A, 5 V supply to I/O expansion slots, total 8 W WP-8437/47: 1.1 A, 5 V supply to CPU and backplane; 4.9 A, 5 V supply to I/O expansion slots, total 30 W WP-8837/47: 1.2 A, 5 V supply to CPU and backplane; 4.8 A, 5 V supply to I/O expansion slots, total 30 W					
Consumption	7.3 W (0.3 A @ 24 V <sub>DC</sub> )		9.1 W (0.38 A @ 24 V <sub>DC</sub> )		9.6 W (0.4 A @ 24 V <sub>DC</sub> )	
■ General Environment						
Temperature	Operating Temperature: -25 ~ +75 °C; Storage Temperature: -30 ~ +80 °C					
Humidity	5 ~ 90% RH (non-condensing)					
■ System						
CPU	PXA270, 32-bit and 520 MHz or compatible					
SDRAM	128 MB					
Dual Battery Backup SRAM	512 KB (for 5 years data retain while power off)					
FLASH	WP-8x37: 128 MB (64 MB for OS image, 63 MB for built-in Flash disk, 1 MB for registry) WP-8x47: 96 MB (64 MB for OS image, 31 MB for built-in Flash disk, 1 MB for registry)					
EEPROM	16 KB; Data retention: 40 years. 1,000,000 erase/write cycles					
Expansion FLASH Memory	microSD socket with 1 GB microSD card (support up to 16 GB compatible microSDHC card)					
RTC (Real Time Clock)	Provide second, minute, hour, date, day of week, month, year					
Dual Watchdog Timers	Yes					
Hardware Serial Number	Yes, 64-bit hardware unique serial number					
NET ID	1~255, user-assigned by software					
Rotary Switch	Yes (0~9)					
DIP Switch	No		Yes (8 bits)		Yes (8 bits)	
I/O Slots	1 (slot0)		4 (slot0 ~ slot3)		8 (slot0 ~ slot7)	
	Accept <b>High Profile I-8K</b> Parallel & <b>High Profile I-87K</b> Serial I/O boards I/O Module <b>Hot Swap Ability</b> : for High Profile I-87K only					
■ VGA & Communication Ports						
VGA	WP-8x37 resolution: 1024 x 768, 800 x 600, 640 x 480; with extra GPU WP-8x47 resolution: 800 x 600, 640 x 480; without extra GPU					
Ethernet	RJ-45 x 2, 10/100 Base-TX (Auto-negotiating, LED indicators) Please use NS-205/NS-208 Industrial Ethernet Switch.					
USB	USB 1.1 (host), for mouse, keyboard or USB drive					
	2	1	2	1	2	1
COM0	Internal communication with I-87K modules in slots					
COM1	RS-232 (Rx/D, Tx/D and GND); Speed: 115200 bps max.; non-isolated					
COM2	RS-485 (D2+, D2-); self-tuner ASIC inside; Speed: 115200 bps max.					
	Isolation: 2500 V <sub>DC</sub>		Isolation: 3000 V <sub>DC</sub>			
COM3	No		RS-232/RS-485 (Rx/D, Tx/D, CTS, RTS & GND for RS-232, Data+ and Data- for RS-485); non-isolated; Speed: 115200 bps max.			
COM4	No		RS-232 (Rx/D, Tx/D, CTS, RTS, DSR, DTR, CD, RI and GND); Non-isolated; Speed: 115200 bps max.			
■ Motion						
Motion Control	No		Integrate with one I-8091W (2-axis) or two I-8091W (4-axis)			
■ PWM Output						
High Speed PWM Module	I-7088: 8-ch. PWM outputs, software support 1Hz~100KHz (non-continuous), duty: 0.1~99.9% I-8088W: 8-ch. PWM outputs, software support 1Hz~100KHz (non-continuous), duty: 0.1~99.9% I-87088W: 8-ch. PWM outputs, software support 1Hz~100KHz (non-continuous), duty: 0.1~99.9%					



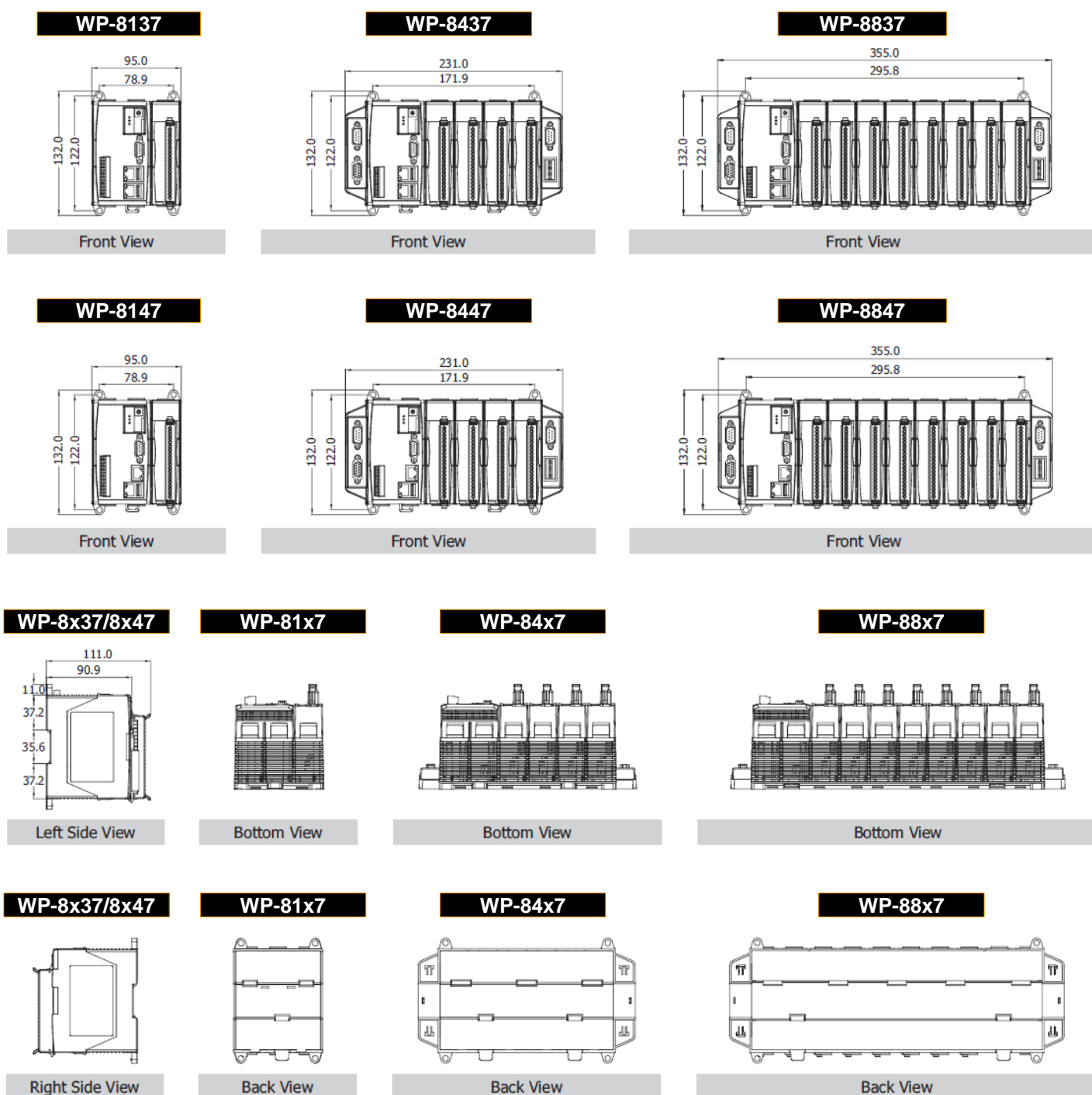
## Specifications of WP-8137/ 8437/ 8837/ 8147/ 8447/ 8847

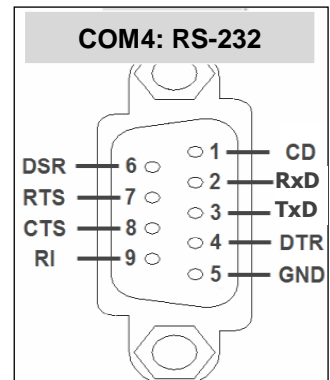
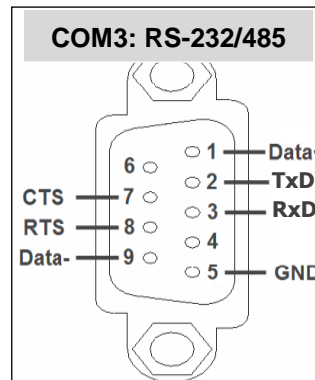
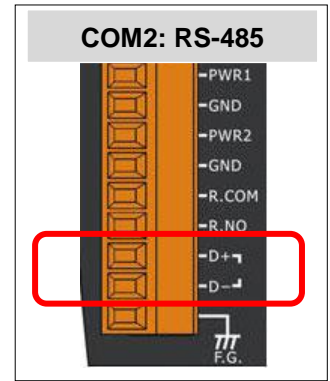
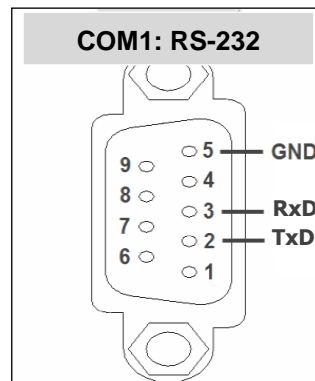
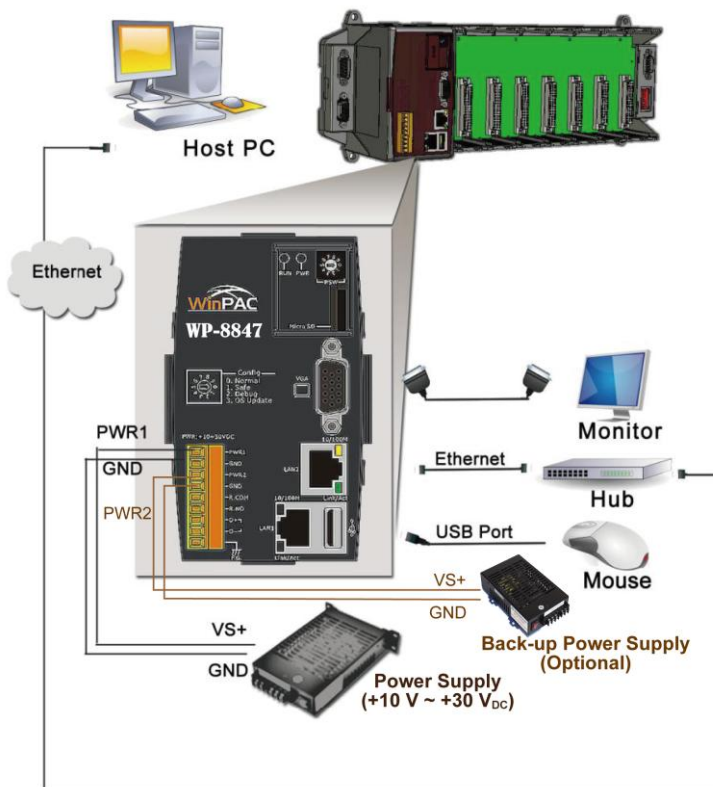
DO Module as PWM	8-ch max. 250 Hz max. For Off=2 & On=2 ms. Output square wave: Off: 2~32766 ms, On: 2 ~ 32766 ms. Optional DO Boards: I-8037W, 8041W, 8041AW, 8042W, 8050W, 8054W, 8055W, 8056W, 8057W, 8060W, 8063W, 8064W, 8068W, 8069W (Relay Output boards can not generate fast square wave)
<b>■ Counter, Encoder, Frequency</b>	
Parallel DI Counter	8 ch. max. for 1 controller. Counter val: 32 bit. 250 Hz max. Min. ON & OFF width must > 2 ms. Optional DI Boards: I-8040W, 8040PW, 8042W, 8046W, 8048W, 8050W, 8051W, 8052W, 8053W, 8053PW, 8054W, 8055W, 8058W, 8063W.
Serial DI Counter	Counter input: 100 Hz max. Counter value: 0 ~ 65535 (16 bit) Optional Serial I-87K DI Boards: I-87040W, 87046W, 87051W, 87052W, 87053W, 87053W-A5, 87054W, 87055W, 87058W, 87059W, 87063W.
Remote DI Counter	All remote I-7000 & I-87K DI modules support counters. 100 Hz max. value: 0 ~ 65535
High Speed Counter	I-87082W: 100 kHz max. 32 bit; I-8084W: 250 kHz max. 32 bit
Encoder	I-8093W : 3-axis Encoder Module, max. 1M Hz for quadrant input mode, max. 4 MHz for pulse/direction and cw/ccw input mode. ( <a href="#">FAQ-112</a> ) I-8084W: 250 kHz max. , 4-ch encoder, can be pulse/direction, or up/down or A/B phase (Quad. mode), No support Encoder Z-index. ( <a href="#">FAQ-100</a> )
Frequency	I-87082W: 2-ch, 1 Hz ~ 100 kHz; I-8084W: 8-ch, 1 Hz ~ 250 kHz;
<b>■ Protocols</b>	
Modbus TCP/IP Master	Link to max. <b>100</b> devices that support Standard Modbus TCP/IP Slave protocol ( <a href="#">FAQ-113</a> )
Modbus RTU/ASCII Master (Multi-Port)	Max. <b>10</b> COM Ports (COM1 ~ 4 and <u>COM5 ~ 14 if multi-serial port boards are plugged in slot 0~3</u> ) can support multi-ports of Modbus RTU/ASCII Master protocol to connect to other Modbus Slave devices. (WP-8137/8147 has no COM3 & COM4.)
Modbus RTU Slave	Max. <b>5</b> COM Ports (COM1, one of COM2/3, COM4 ~ 8) can support Modbus RTU Slave protocol for connecting ISaGRAF, PC/HMI/OPC Server & HMI panels. (WP-8137/8147 has no COM3 & COM4.)
Modbus TCP/IP Slave	2 Ethernet Ports all support Modbus TCP/IP Slave protocol for connecting ISaGRAF & PC/HMI. 2 Ports support up to <b>32</b> connections. (If PAC uses 1 connection to connect each PC/HMI, it can connect up to <b>32</b> PC/HMI; If PAC uses 2 connections to connect each PC/HMI, it can connect up to 16 PC/HMI; ...) When one Ethernet port is broken, the other one can still connect to PC/HMI.
Web HMI	Ethernet Ports for connecting PC running Internet Explorer
I-7000 & I-87K RS-485 Remote I/O	One of COM2/COM3 supports I-7000 I/O modules, I-87K base + I-87K Serial I/O boards or <u>RU-87Pn + I-87K High Profile I/O boards</u> as Remote I/O. (WP-8147 has no COM3 & COM4.) Max. 255 I-7000/87K Remote I/O modules for one controller.
M-7000 Series Modbus I/O	Max. 10 RS-485 ports (COM1 ~ 4 & <u>COM5 ~ 14 if multi-serial port boards are plugged in</u> ) can support M-7000 series Modbus I/O. Each port can connect up to <b>32</b> M-7000 Modules.
Modbus TCP/IP I/O	LAN2 supports ICP DAS Ethernet I/O : <b>I-8KE4-MTCP</b> and <b>I-8KE8-MTCP</b> (listed at <a href="#">FAQ-042</a> ) If LAN2 is broken, 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	Support max <b>8</b> pcs. I-8172W boards in slot 0 ~ 7 to connect to FRnet I/O modules, like FR-2053, FR-2057 FR-32R, FR-32P. ( <a href="#">FAQ-048</a> ) Each I-8172W board can link max. 256 DI plus 256 DO ch.
Send E-mail	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. (LAN2 Port only)
SMS: Short Message Service	WP-84x7/88x7's COM4 (or COM5 if <u>multi-serial port board is plugged in</u> ) and WP-81x7's COM1 (or COM5 if <u>multi-serial port board is plugged in</u> ) 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 (External Modem: 850/900/1800/1900 GSM/GPRS)
User-Defined Protocol	User can write his own protocol applied at <u>COM1~COM4</u> & <u>COM5~COM14(if multi-serial port boards are plugged in)</u> by Serial communication function blocks.
MMICON/LCD	<u>COM4</u> or <u>COM5(if I-8112W/8114W is found)</u> 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	<p>This redundant system has setup two "Active IP" address point to the active LAN1 and LAN2 ports always. One 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 WP-8x7 is currently active.</p> <p>Moreover, the new redundant system can integrate with the RU-87P4/87P8 Expansion Unit plus the I-87K high-profile I/O cards to support the hot-swap application.</p> <p>If the I/O card is damaged, the maintenance person just takes one good-card with same model number to hot-swap the damaged one without stopping this redundant system. (<a href="#">FAQ-093</a>)</p>
CAN/CANopen	<p>COM1,3,4 or COM5~COM14 resides at the I-8112iW/8114W/8114iW RS-232 expansion board to connect one I-7530(converter: RS-232 to CAN) to support CAN/CANopen devices and sensors. One PAC supports max.10 RS-232 ports to connect max.10 I-7530. (<a href="#">FAQ-086</a>)</p>

## ► Mechanical Drawing (Unit: mm)





## I/O Modules Selection Guide For WP-8xx7 Series

**High Speed Local I/O Modules: Parallel Bus**

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

I-8K Analog I/O Modules	
I-8014W	16-bit 250K sampling rate 8/16-ch. analog input module (The scan rate cannot reach 250K when using in the ISaGRAF PAC)
I-8017HW	8-ch. Differential or 16-ch. Single-ended, 14-bit, High Speed Analog Input Module (current input require external 125 Ω resistor) (The scan rate cannot reach 100K when using in the ISaGRAF PAC).
I-8024W	4-ch. Isolated Analog Output Module (+/-10 V, 0 ~ +20 mA)
I-8K Digital I/O Modules	
I-8037W	16-ch. Isolated Open Collector Output Module
I-8040W	32-ch. Isolated Digital Input Module
I-8040PW	32-ch. Isolated Digital Input with Low Pass Filter Module
I-8041W	32-ch. Isolated Open Collector Digital Output Module (Sink)
I-8041AW	32-ch. Isolated Open Collector Digital Output Module (Source)
I-8042W	16-ch. Isolated Digital Input & 16-ch. Isolated Open Collector Digital Output Module
I-8046W	16-ch. Isolated Digital Input Module
I-8050W	16-ch. Universal Digital I/O Module
I-8051W	16-ch. Non-isolated Digital Input Module
I-8052W	8-ch. Differential Isolated Digital Input Module
I-8053W	16-ch. Isolated Digital Input Module
I-8053PW	16-ch. Isolated Digital Input with Low Pass Filter Module
I-8054W	8-ch. Isolated Digital Input Module & 8-ch. Isolated Open Collector Digital Output Module
I-8055W	Non-isolated 8-ch. Digital Logic Input Module & 8-ch. Open Collector Digital Output Module
I-8056W	16-ch. Non-isolated Open Collector Output Module
I-8057W	16-ch. Isolated Open Collector Output Module
I-8058W	8-ch. Differential Isolated Digital Input Module, Max. AC/DC Input : 250V





## I/O Modules Selection Guide For WP-8xx7 Series

I-8060W	6-ch. Relay Output Module, AC: 0.6 A @ 125 V , 0.3 A @ 250 V; DC: 2 A @ 30 V
I-8063W	4-ch. Diff. Isolated digital input & 4-ch. Relay output module, AC : 0.6 A @ 125 V ; 0.3 A @ 250 V
I-8064W	8-ch. Power Relay Output Module, AC: 5 A @ 250 V, DC: 5 A @ 30 V
I-8068W	4-ch. Form-A, 5 A @ 250 V <sub>AC</sub> /28 V <sub>DC</sub> & 4-ch. Form-C, 5 A (NO) /3 A (NC) @ 277 V <sub>AC</sub> /30 V <sub>DC</sub> Relay Output Module
I-8069W	8-ch. PhotoMOS Relay Output Module, Max. AC/DC: 1 A @ 60 V
<b>I-8K Counter/ Frequency Modules</b>	
I-8084W	4/8-ch. Counter/Frequency Module, Isolated or TTL level. (Can measure 4-ch Encoder without Z-index)
I-8088W	8-ch. PWM Output and 8-ch. isolated DI Module, software support 1 Hz ~ 100 kHz (non-continuous)
<b>I-8K Motion Modules</b>	
I-8093W	3-axis Encoder Module, max. 1M Hz for quadrant input mode, max. 4M Hz for pulse/direction and cw/ccw input mode
I-8090W	3-axis Encoder Module
I-8091W	2-axis Stepping/Servo Motor Control Card without encoder input
<b>I-8K Communication Modules</b>	
I-8112iW	2-ch. isolated RS-232 expansion module
I-8114W	4-ch. non-isolated RS-232 expansion module
I-8114iW	4-ch. isolated RS-232 expansion module
I-8142iW	2-ch. isolated RS-422/485 expansion module
I-8144iW	4-ch. isolated RS-422/485 expansion module
I-8172W	2-port FRnet module

**RS-485 Remote I/O Modules: Serial Interface; HOT-SWAP**

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

<b>I-87K Analog I/O Modules</b>	
I-87005W	8-ch. Thermistor input and 8-ch. digital output module
I-87013W	4-ch. , 16-bit, 10 Hz (Total), 2/3/4 Wire RTD Input Module with Open Wire Detection
I-87015W	7-ch. , 16-bit, 12 Hz (Total), RTD Input Module with Open Wire Detection (for short sensor distance)
I-87015PW	7-ch. RTD Input Module with 3-wire RTD lead resistance elimination and with Open Wire Detection (for long sensor distance)
I-87017RW	8-ch. Differential , 16/12-bit, 10/60 Hz (Total) Analog Input Module with 240 V <sub>rms</sub> Over Voltage Protection, Range of -20 ~ +20 mA Requires Optional External 125 Ω Resistor
I-87017RCW	8-ch. Differential , 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-87018RW	8-ch. Thermocouple Input Module. Recommend to use the better I-87018ZW.
I-87018W	8-ch. Thermocouple Input Module. Recommend to use the better I-87018ZW.
I-87018ZW	10-ch. Differential , 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-87019RW	8-ch. Differential , 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 ~ +20 mA need to set Jumper on board)
I-87024CW	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-87028CW	8-ch. 12-bit current output module
<b>I-87K Digital I/O Modules</b>	
I-87040W	32-ch. Isolated Digital Input Module
I-87041W	32-ch. Sink Type Open Collector Isolated Digital Output Module
I-87046W	16-ch. Non-Isolated Digital Input Module for Long Distance Measurement
I-87051W	16-ch. Non-Isolated Digital Input Module
I-87052W	8-ch. Differential , 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 <sub>DC</sub> 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/O Modules Selection Guide For WP-8xx7 Series

I-87058W	8-ch. 80~250 V <sub>AC</sub> Isolated Digital Input Module
I-87059W	8-ch. Differential 10-80 V <sub>AC</sub> Isolated Digital Input Module
I-87061W	16-ch. Relay Output Module (RoHS)
I-87063W	4-ch. Differential Isolated Digital Input and 4-ch. Relay Output Module. 5 A (NO) / 3 A (NC) @ 5 ~ 24 V <sub>DC</sub> ; 5 A (NO) / 3 A (NC) @ 0 ~ 250 V <sub>AC</sub>
I-87064W	8-ch. Relay Output Module, 5 A (47~63 Hz) @ 0~ 250 V <sub>AC</sub> ; 5 A @ 0~ 30 V <sub>DC</sub>
I-87065W	8-ch. AC SSR Output Module, AC: 1.0 A <sub>rms</sub> @ 24 ~ 265 V <sub>rms</sub>
I-87066W	8-ch. DC SSR Output Module , DC: 1.0 A <sub>rms</sub> @ 3 ~ 30 V <sub>DC</sub>
I-87068W	4-ch. Form A Relay Output and 4-ch. Form C Relay Output Module. Form A: 8 A @ 250 V <sub>AC</sub> ; 8 A @ 28 V <sub>DC</sub> . Form C: 5 A (NO) / 3 A (NC) @ 277 V <sub>AC</sub> ; 5 A (NO) / 3 A (NC) @ 30 V <sub>AC</sub>
I-87069W	8-ch. PhotoMOS Relay Output Module, Max. AC/DC: 0.13 A @ 350 V
<b>I-87K Counter/Frequency Modules</b>	
I-87082W	2-ch. Counter/Frequency Module, Isolated or Non-isolated Inputs
<b>I-87K PWM Module</b>	
I-87088W	8-ch. PWM outputs, software support 1Hz~100KHz (non-continuous), duty: 0.1~99.9%
<b>I-87K GPS Module</b>	
I-87211W	Time-Synchronization and GPS module for getting UTC/local time and local Longitude/Latitude

<b>RS-485 Remote I/O Modules</b>	
I-7000	<a href="http://www.icpdas.com &gt; Products &gt; Remote I/O Modules/Units &gt; I-7000 Modules &gt; Selection Guide">www.icpdas.com &gt; Products &gt; Remote I/O Modules/Units &gt; I-7000 Modules &gt; Selection Guide</a>
M-7000	<a href="http://www.icpdas.com &gt; Products &gt; Remote I/O Modules/Units &gt; M-7000 Modules &gt; Selection Guide">www.icpdas.com &gt; Products &gt; Remote I/O Modules/Units &gt; M-7000 Modules &gt; Selection Guide</a>
<b>RS-485 Remote Hot-Swap Expansion Unit</b>	
RU-87P1/2/4/8	<a href="http://www.icpdas.com &gt; Products &gt; Remote I/O Modules/Units &gt; Remote I/O Expansion Unit &gt; Selection Guide">www.icpdas.com &gt; Products &gt; Remote I/O Modules/Units &gt; Remote I/O Expansion Unit &gt; Selection Guide</a>
<b>RS-485 Remote Expansion Unit</b>	
I-87K1/4/5/8/9	<a href="http://www.icpdas.com &gt; Products &gt; Remote I/O Modules/Units &gt; Remote I/O Expansion Unit &gt; Selection Guide">www.icpdas.com &gt; Products &gt; Remote I/O Modules/Units &gt; Remote I/O Expansion Unit &gt; Selection Guide</a>

## ► Ordering Information

WP-8137-EN	WP-8147-EN	ISaGRAF based WinPAC-8000 with 1 I/O slots (English version of OS)
WP-8437-EN	WP-8447-EN	ISaGRAF based WinPAC-8000 with 4 I/O slots (English version of OS)
WP-8837-EN	WP-8847-EN	ISaGRAF based WinPAC-8000 with 8 I/O slots (English version of OS)
WP-8137-TC	WP-8147-TC	ISaGRAF based WinPAC-8000 with 1 I/O slots (Traditional Chinese version of OS)
WP-8437-TC	WP-8447-TC	ISaGRAF based WinPAC-8000 with 4 I/O slots (Traditional Chinese version of OS)
WP-8837-TC	WP-8847-TC	ISaGRAF based WinPAC-8000 with 8 I/O slots (Traditional Chinese version of OS)
WP-8137-SC	WP-8147-SC	ISaGRAF based WinPAC-8000 with 1 I/O slots (Simplified Chinese version of OS)
WP-8437-SC	WP-8447-SC	ISaGRAF based WinPAC-8000 with 4 I/O slots (Simplified Chinese version of OS)
WP-8837-SC	WP-8847-SC	ISaGRAF based WinPAC-8000 with 8 I/O slots (Simplified Chinese version of OS)

## ► Accessories

ISaGRAF-256-E	ISaGRAF Workbench Software Ver.3 (256 I/O Tags) with USB Dongle and English application book
ISaGRAF-256-C	ISaGRAF Workbench Software Ver.3 (256 I/O Tags) with USB Dongle and Chinese application book
ISaGRAF-32-E	ISaGRAF Workbench Software Ver.3 (32 I/O Tags) with English application book (Note)
ISaGRAF-32-C	ISaGRAF Workbench Software Ver.3 (32 I/O Tags) with Chinese application book (Note)
ISaGRAF Book-E	ISaGRAF application book (English version)
ISaGRAF Book-C	ISaGRAF application book (Chinese version)
NS-205 CR	Unmanaged 5-port Industrial 10/100 Ethernet Switch with Plastic Case (RoHS)
NS-208 CR	Unmanaged 8-port Industrial 10/100 Ethernet Switch with Plastic Case (RoHS)

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

\* Using ISaGRAF-32 can control more than 32 I/O tags. (Please refer to ISaGRAF User's Manual Ch. 3.4)