

WinPAC-8x47 Series WinCE 5.0 ISaGRAF PAC



WP-8147

WP-8447

WP-8847



Microsoft Visual Studio.net Microsoft Embedded Visual C++ Microsoft Windows CE.net

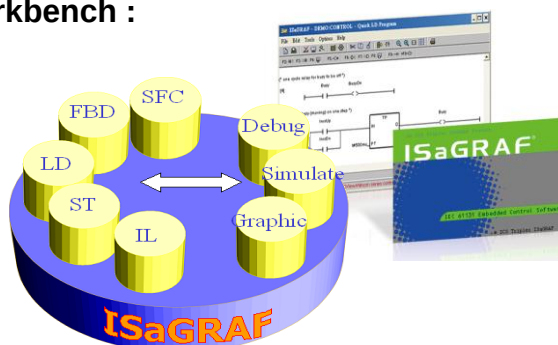


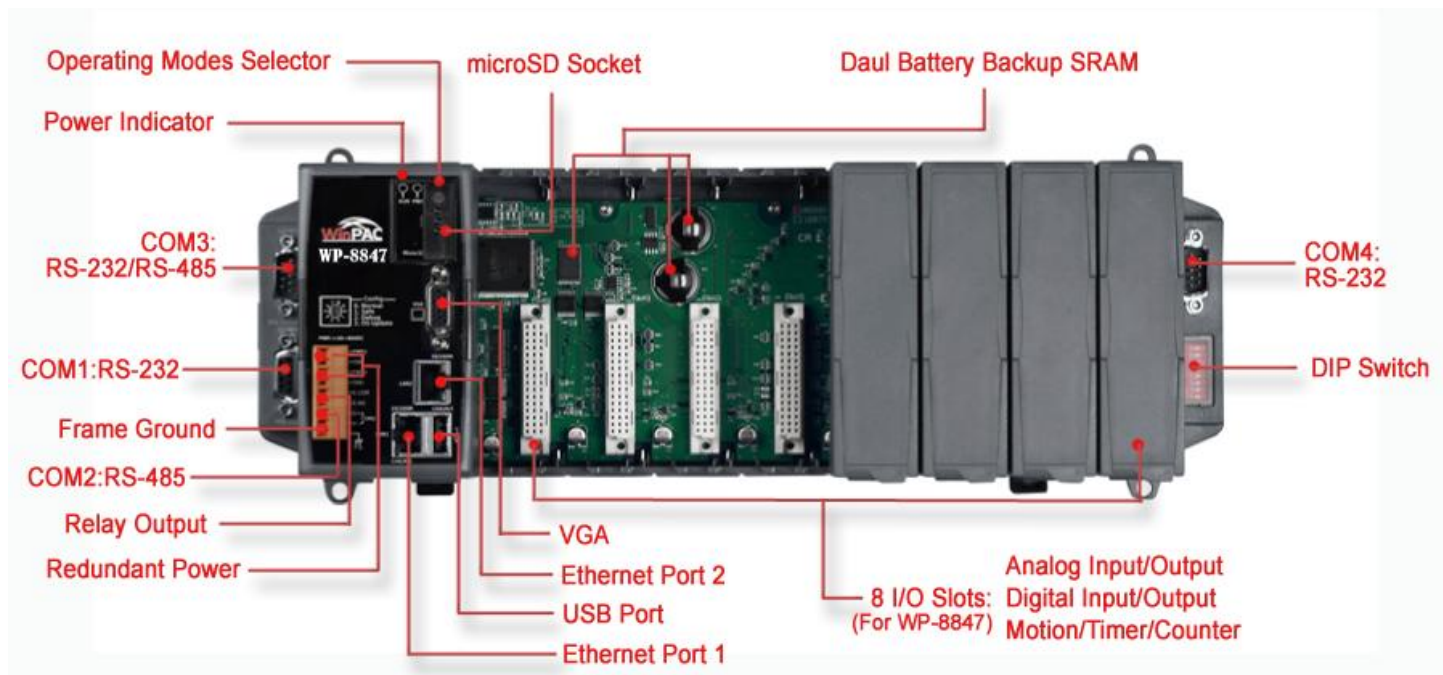
- ISaGRAF Ver.3 SoftLogic Inside
- Support IEC 61131-3 Standard
- Windows CE 5.0 Inside
.NET Compact Framework 2.0
- Support Microsoft
Visual Basic.NET 2003/2005/2008,
Visual C#.NET 2003/2005/2008,
EVC++ 4.0
- Powerful PXA270 CPU:
32-bit & 520 MHz or Compatible
- SDRAM: 128 MB, FLASH: 96 MB
- Dual Battery Backup SRAM: 512 KB
- I/O Slots: 1/4/8 Slot(s)
Hot-Swap I-87K High Profile Card
- RS-232/485 Serial Comm. Ports:
WP-8147: 2 Ports
WP-8447/8847: 4 Ports
- Dual Ethernet Ports
One VGA & one USB Ports
- Redundant Power Inputs,
Dual-WinPAC Redundant System

WinPAC-8x47 Series (WP-8147/8447/8847) is the new generation WinCE 5.0 based ISaGRAF PAC (Programmable Automation Controller) of ICP DAS. WP-8x47 equips a PXA270 CPU (520 MHz) running Windows CE 5.0 Operating System, various connectivity (10/100 Base-TX Dual Ethernet Ports, 2 or 4 RS-232/RS-485 ports, 1 VGA, 1 USB port) 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). Memories come with 128 MB SDRAM, 512 KB dual battery backup SRAM, 96 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
- Simulate program even without controller
- Debug on-line
- Control/Monitor on-line
- Simple graphic HMI





Hardware Features:

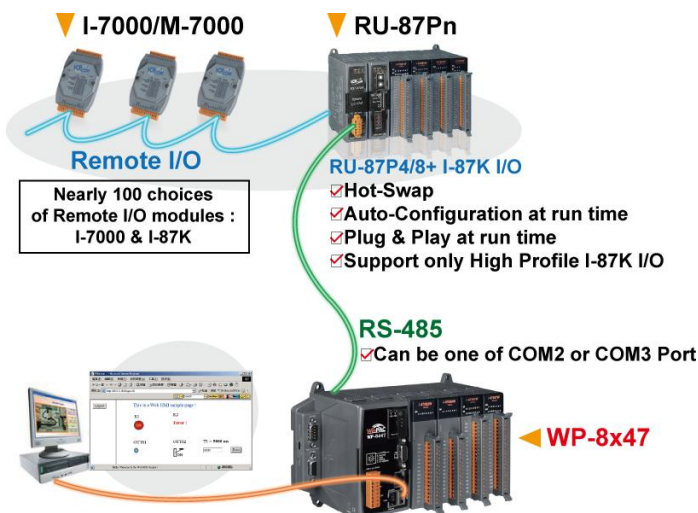
- ☑ **Powerful CPU Module**
 - PXA270 CPU: 32-bit & 520 MHz or compatible
- ☑ **Rich Memories**
 - EEPROM : 16 KB
 - SDRAM : 128 MB
 - Dual battery backup SRAM : 512 KB
 - FLASH : 96 MB
 - microSD card : 1 GB
- ☑ **Dual Battery-Backup SRAM (512 KB)**
 - Retain the data for 5 years while power off
- ☑ **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
 - Single 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 Modbus Master**
 - RTU, ASCII, RS-232/485/422 (Max. **10** ports)
- ☑ **Support Modbus RTU/TCP Slave**
 - Modbus RTU (RS-232/485/422) Slave (Max. **5** ports)
 - Modbus TCP/IP Slave (Max. **32** connections)
- ☑ **Support Data Exchange**
 - Ebus: Through Ethernet
 - PAC to PAC
- ☑ **Support CAN/CANopen**
 - Via I-7530 or I-8120W to connect CAN/CANopen devices
- ☑ **Support FRnet I/O (Via I-8172W)**
- ☑ **Support Motion Control**
- ☑ **Support Send Email with One File**
- ☑ **Support SMS: Short Message Service**
 - GSM modem
- ☑ **Support Wireless Communication**
 - Radio Wireless
- ☑ **Support Data-Recorder & Data-Logger**
- ☑ **Support Auto-report Acquisition/Control Data**
- ☑ **Support VW Solutions**

Remote I/O Application

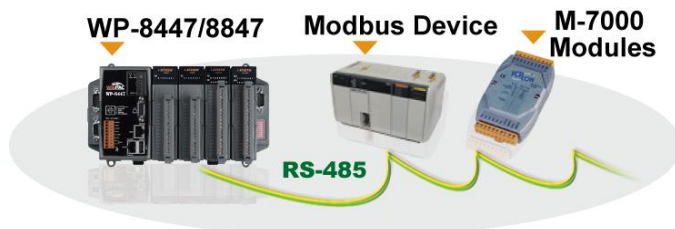


SMS: Short Message Service



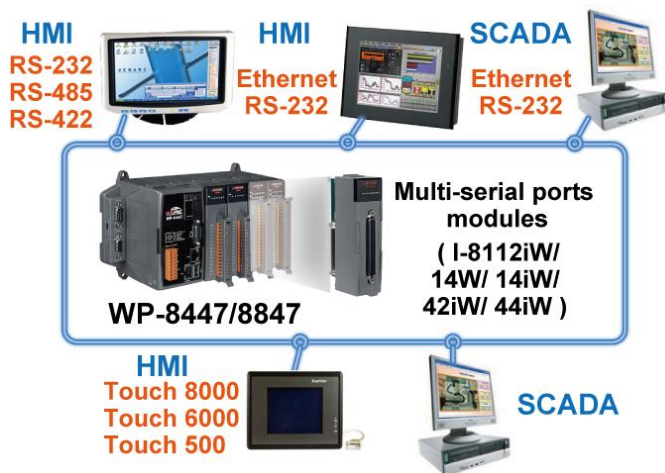
Modbus Master: RTU, ASCII, RS-232/485/422

- 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.)



Modbus RTU/TCP Slave Ports

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

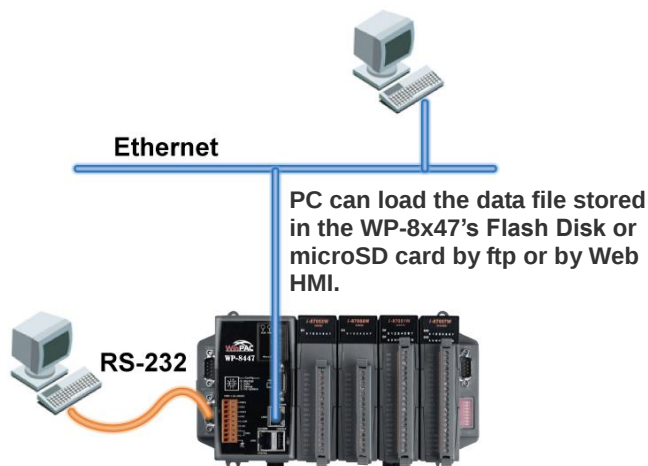


Motion Control

- 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-8084W**: 4-axis, without Z-index
I-8090W: 3-axis



Data-Recorder & Data-Logger

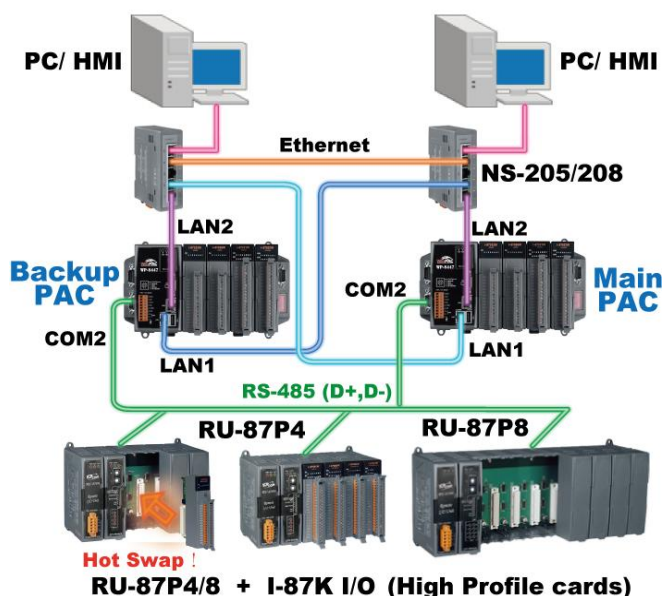


Communicate With Other TCP/IP Server or UDP Client/Server Devices



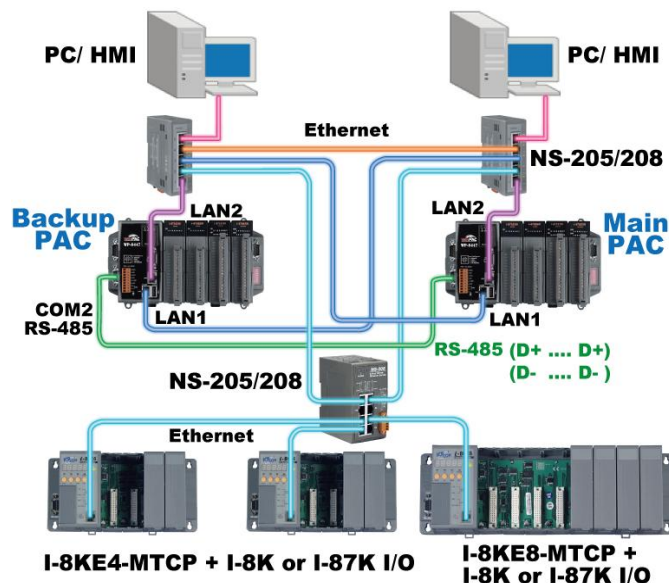
● New Hot-Swap and Redundant System

- 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 > FAQ > Software > ISaGRAF Ver.3 (English) - 093



● New Redundant System with Ethernet I/O

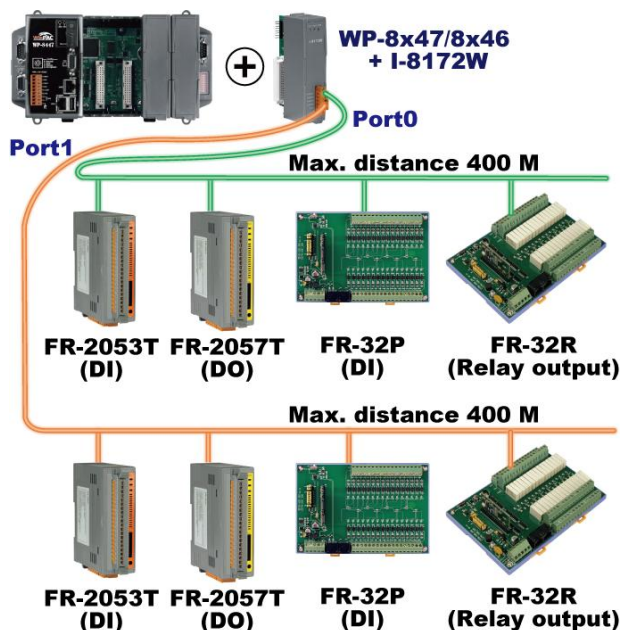
- If one Ethernet cable is broken or damaged, the other one will still handle the Ethernet I/O and exchange data with the other redundant controller.
- The scan of Ethernet I/O is much faster than that of RS-485 I-7000 or I-87K I/O.
- More at www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English)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



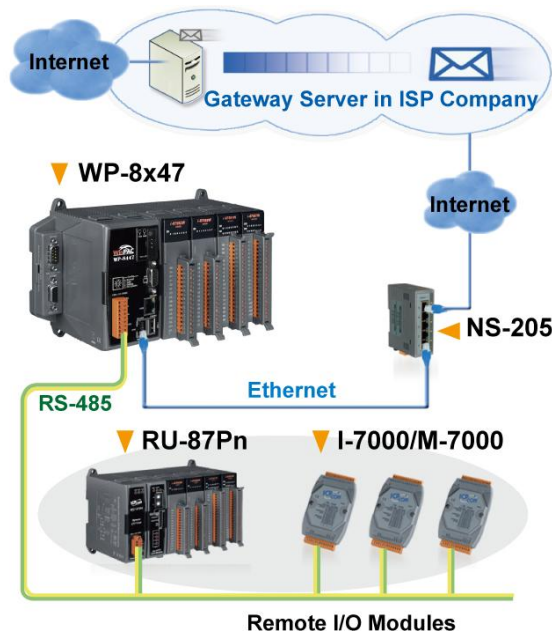
● Fast FRnet Remote I/O

Advantage of FRnet I/O:

- Fast I/O scan: About 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)



● Send Email with One Attached File



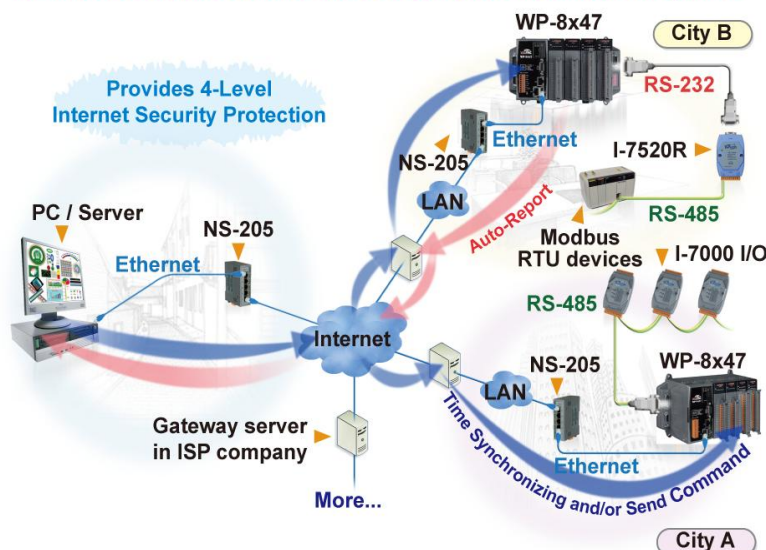
More at www.icpdas.com > FAQ > Software > ISaGRAF Ver.3 (English) - 067

● 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.

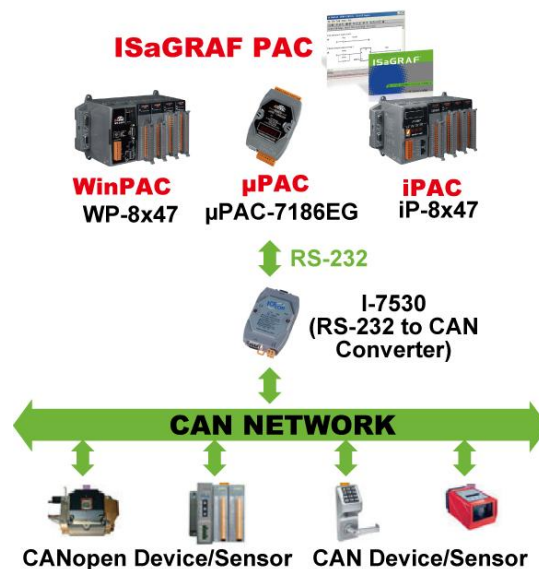
Advantage : Every WinCon in the different location doesn't need a fixed Internet IP

Stable and Cost-effective Data Acquisition Auto-Report System



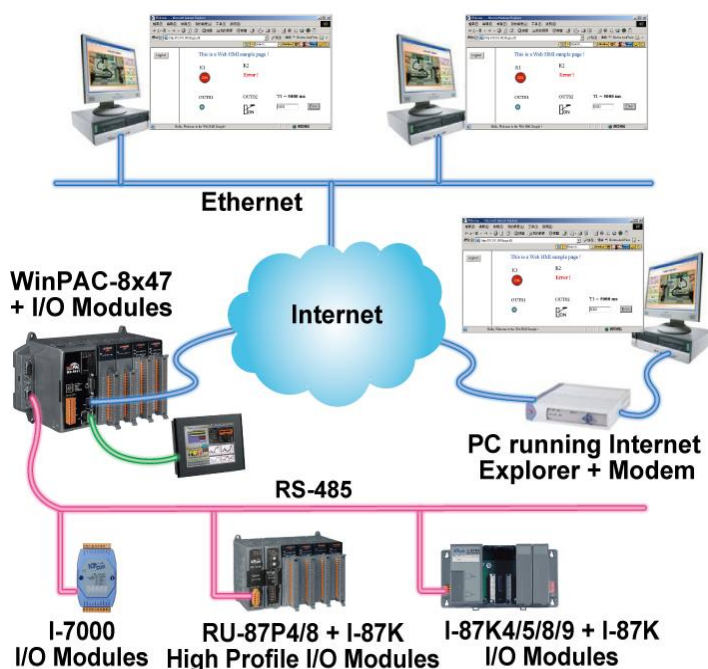
● Integrate with CAN/CANopen Devices & Sensors

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



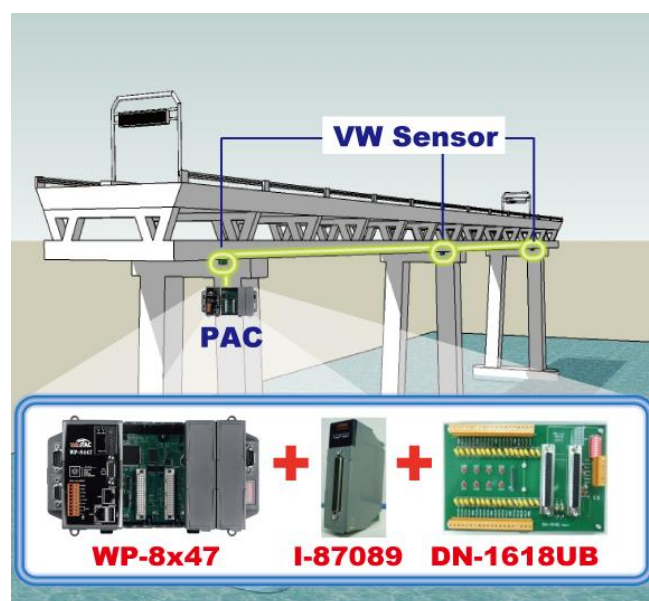
● Multiple Web HMI – Monitor & Control Everywhere!

PC Running the Internet Explorer



● Stress Monitoring Application of Constructions

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





Specifications of WP-8147/8447/8847

■ 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	WP-8x47 accepts 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-8x47 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 _{DC} (unregulated),
Isolation	1 kV
Redundant Power Inputs	Yes, with one power relay (1 A @ 24 V _{DC}) for alarm
Capacity	WP-8147: 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-8447: 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-8847: 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	WP-8147: 7.3 W (0.3 A @ 24 V); WP-8447: 9.1 W (0.38 A @ 24 V); WP-8847: 9.6 W (0.4 A @ 24 V);
■ General Environment	
Temperature	Operating Temperature: -25°C ~ +75°C (-13° F ~ +167° F) Storage Temperature: -30°C ~ +85°C (-40° F ~ +176° F)
Humidity	5% ~ 95% RH (non-condensed)
■ System	
CPU	CPU: PXA270, 32-bit and 520 MHz or compatible
Dual Watchdog Timer	Watchdog: Dual Watchdog Timer
RTC (Real Time Clock)	Gives hour, minute, sec, day of week, day of month, month & year, valid up from 1980 to 2079
EEPROM	16 KB; Data retention: 40 years. 1,000,000 erase/write cycles
SRAM	128 MB
Dual Battery Backup SRAM	512 KB (for 5 years data retain while power off)
FLASH	96 MB (64 MB for OS image, 31 MB for built-in Flash disk, 1 MB for registry)
Expansion FLASH Memory	microSD socket with 1 GB FLASH card (support up to 16 GB compatible microSD card)
Serial Number	Yes, 64-bit hardware unique serial number
NET ID	1 ~ 255, set by software
Rotary Switch	Yes (0~9)
DIP Switch	WP-8447 & WP-8847: Yes, 8 bits DIP Switch; WP-8147 : no DIP Switch
I/O Slots	WP-8147: 1 slot (slot0); WP-8447: 4 slots (slot0 ~ slot3); WP-8847: 8 slots (slot0 ~ slot7); Accept High Profile I-8K Parallel & High Profile I-87K Serial I/O boards I/O Module Hot Swap Ability : for High Profile I-87K only
■ VGA & Communication Ports	
VGA Port	1 VGA port (800 x 600 resolution)
Dual Ethernet Ports	2 Ethernet Ports: LAN1 & LAN2, 10/100 Base-TX Ethernet Controller (Auto-negotiating, Auto MDI/MDI-X, LED indicator); Please use NS-205/NS-208 Industrial Ethernet Switch.
USB Port	1 USB 1.1 Host ports for USB mouse, keyboard or USB drive
COM0	Internal communication with the I-87K High Profile modules in slots
COM1	RS-232 (RxD, TxD, and GND); Non-isolation; Speed: 115200 bps max.
COM2	RS-485 (D2+, D2-, self-tuner ASIC inside); Speed: 115200 bps max. Isolation: 3000 V_{DC} for 4/8 slots WP-8447/8847; 2500 V_{DC} for 1 slot WP-8147.
COM3	RS-232/RS-485 (RxD, TxD, CTS, RTS and GND for RS-232, DATA+ and DATA- for RS-485); Non-isolation; Speed: 115200 bps max. (WP-8147 has no COM3 & COM4.)
COM4	RS-232 (RxD, TxD, CTS, RTS, DSR, DTR, CD, RI and GND); Non-isolation; Speed: 115200 bps max. (WP-8147 has no COM3 & COM4.)
■ Motion	
Motion Control	WP-8447/8847 integrate with one I-8091W (2-axis) or two I-8091W (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 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 pulse)

■ Counter, Encoder, Frequency

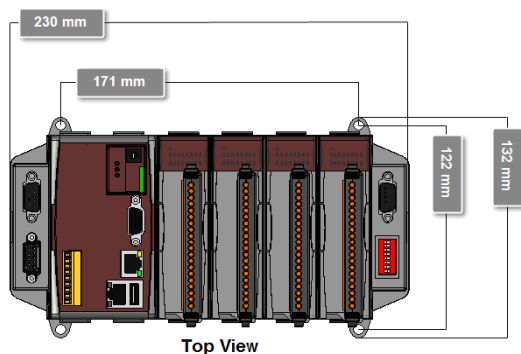
Parallel DI Counter	8 ch. max. for 1 controller. Counter val: 32 bit. 250 Hz max. Min. ON & OFF width must > 2 ms. Optional DI Boards: I-8040W, 8040PW, 8042W, 8048W, 8050W, 8051W, 8052W, 8053W, 8053PW, 8054W, 8055W, 8058W, 8063W.
Serial DI Counter	Counter input: 100 Hz max. Counter value: 0 ~ 65535 (16 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: 450 kHz max. 32 bit
Encoder	I-8084W: 4-ch encoder, can be dir/pulse, or up/down or A/B phase (Quard. mode) Not support Encoder Z-index.
Frequency	I-87082W: 2-ch, 1 Hz ~ 100 kHz; I-8084W: 8-ch, 1 Hz ~ 450 kHz;

■ Protocols

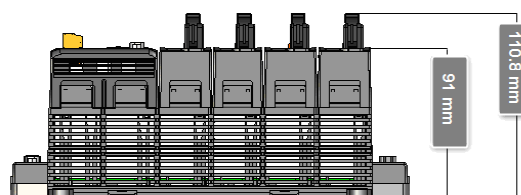
Modbus RTU/ASCII Master Protocol (Multi-Port)	Up to 10 COM Ports (COM1, 2, 3, 4 and <u>COM5~COM14 if multi-serial port boards are plugged in slot 0~3</u>) can support multi-ports of Modbus RTU/ASCII Master protocol to connect to other Modbus Slave devices. (WP-8147 has no COM3 & COM4.)
Modbus RTU Slave Protocol	Up to 5 COM Ports (COM1, one of COM2/3, COM4 and COM5 ~ COM8) can support Modbus RTU Slave protocol for connecting ISaGRAF, PC/HMI/OPC Server & HMI panels. (WP-8147 has no COM3 & COM4.)
Modbus TCP/IP Slave Protocol	2 Ethernet Ports all support Modbus TCP/IP Slave protocol for connecting ISaGRAF & PC/HMI. LAN1 & LAN2 support total up to 32 connections. (If WP-8x47 uses 1 connection to connect each PC/HMI, it can connect up to 32 PC/HMI; If WP-8x47 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 Protocol	Ethernet Ports for connecting PC running Internet Explorer
I-7000 & I-87K RS-485 Remote I/O	One of COM2, COM3 supports <u>I-7000 I/O modules, I-87K base + I-87K Serial I/O boards and RU-87P1/2/4/8 + I-87K High Profile I/O boards as Remote I/O.</u> Max. 255 I-7000/87K Remote I/O modules for one controller. (WP-8147 has no COM3 & COM4.)
M-7000 Series Modbus I/O	Max. 10 RS-485 ports (COM1~4 & <u>COM5~COM14 if multi-serial port boards are plugged in</u>) can support M-7000 series Modbus I/O. Each port can connect up to 32 M-7000 Modules.
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 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 8 pcs. I-8172W boards in slot 0 to 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-8172w board can connect up to 256 DI plus 256 DO 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. (LAN2 Port only)
SMS: Short Message Service	One of COM4 (or COM5 <u>if 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: Supreme (850/900/1800/1900 GSM/ GPRS External Modem)
User Defined Protocol	User can write his own protocol applied at <u>COM1~COM4 & COM5~COM14(if multi-serial port boards are plugged in)</u> by Serial communication function blocks.
Modem_Link	WP-8x47 series does not support Modem_Link.
MMICON/LCD	<u>COM4 or 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	This redundant system has setup two "Active IP" address point to the active WP-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 WP-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 number 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	WP-8x47 can use its COM1,3,4 or <u>COM5~COM14 resides at the I-8112iW/8114W/8114iW RS-232 expansion board</u> to connect one I-7530 : the RS-232 to CAN converter to support CAN and CANopen devices and sensors. One WP-8x47 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.

► Mechanical Drawing of WP-8447/8847

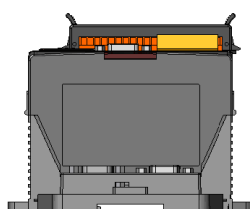
WP-8447



Top View

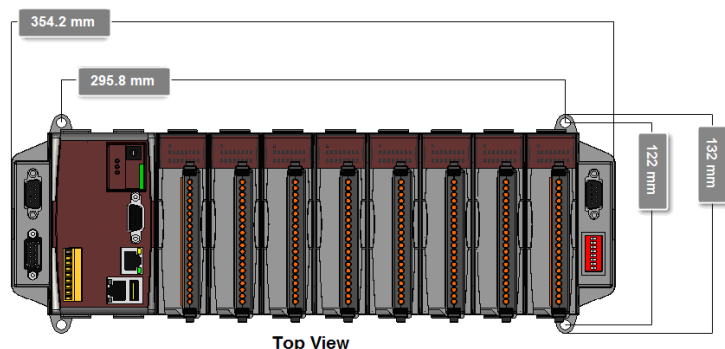


Front View

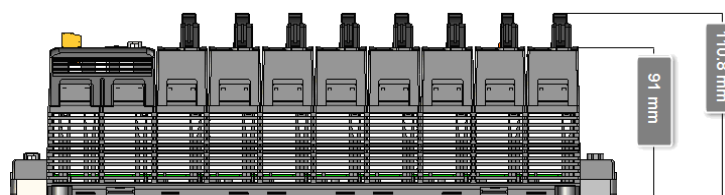


Left Side View

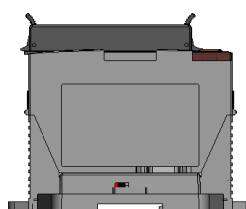
WP-8847



Top View

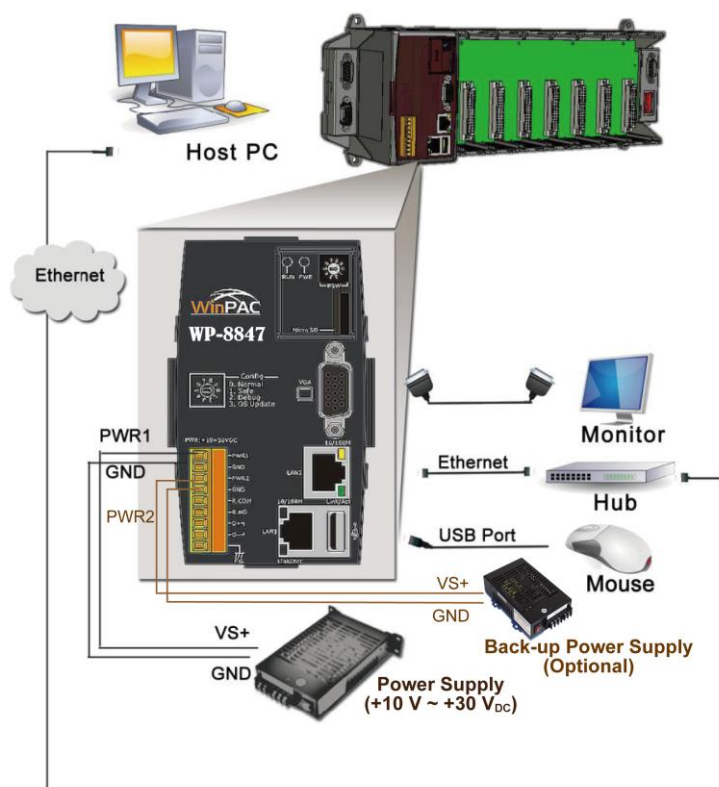


Front View

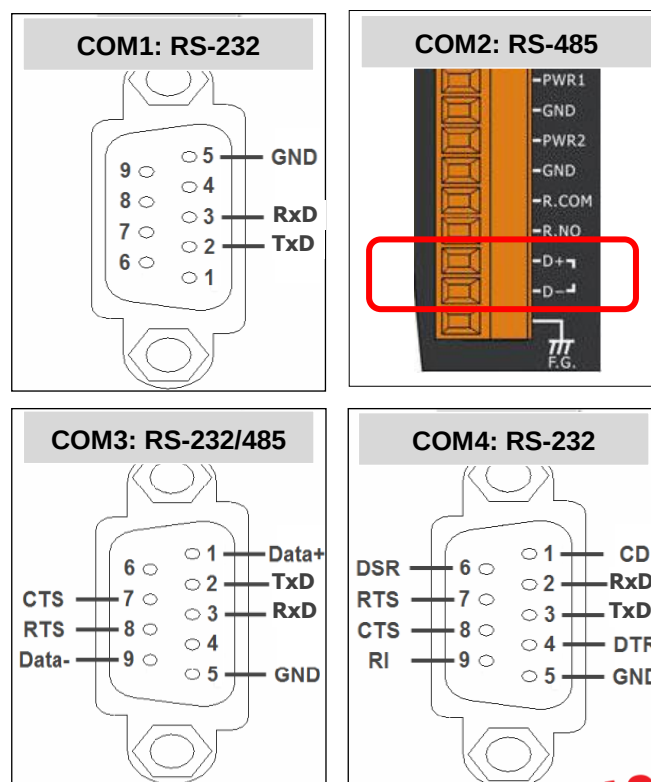


Right Side View

► Wiring of WP-8447/8847



► Pin assignment of WP-8447/ WP-8847





I/O Modules Selection Guide For WP-8x47 Series

High Speed Local I/O Modules: Parallel Bus

I-8K High Profile Modules: More at www.icpdas.com > Products > PAC - 8K & 87K I/O Modules

I-8K Analog I/O Modules	
I-8017HW	8-ch. Diff. or 16-ch. Single-ended, 14-bit, High Speed Analog Input Module(current input require external 125 Ω resistor) just like I-8017HS.
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-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 _{AC} /28 V _{DC} & 4-ch. Form-C, 5 A (NO) /3 A (NC) @ 277 V _{AC} /30 V _{DC} Relay Output Module
I-8069W	8-ch. PhotoMOS Relay Output Module, Max. AC/DC: 1 A @ 60 V
I-8K Counter/ Frequency Modules	
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
I-8K Communication Modules	
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 > Products > PAC - 8K & 87K I/O Modules

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-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. Diff. , 16/12-bit, 10/60 Hz (Total) Analog Input Module with 240 V _{rms} Over Voltage Protection, Range of -20 ~ +20 mA Requires Optional External 125 Ω Resistor
I-87017RCW	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-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. 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-87019RW	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 ~ +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



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-ch. Non-Isolated Digital Input Module for Long Distance Measurement
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-87059W	8-ch. Differential 10-80 V _{AC} 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 V _{DC} ; 5 A (NO) / 3 A (NC) @ 0 ~ 250 V _{AC}
I-87064W	8-ch. Relay Output Module, 5 A (47~63 Hz) @ 0~ 250 V _{AC} ; 5 A @ 0~ 30 V _{DC}
I-87065W	8-ch. AC SSR Output Module, AC: 1.0 A _{rms} @ 24 ~ 265 V _{rms}
I-87066W	8-ch. DC SSR Output Module , DC: 1.0 A _{rms} @ 3 ~ 30 V _{DC}
I-87068W	4-ch. Form A Relay Output and 4-ch. Form C Relay Output Module. Form A: 8 A @ 250 V _{AC} ; 8 A @ 28 V _{DC} . Form C: 5 A (NO) / 3 A (NC) @ 277 V _{AC} ; 5 A (NO) / 3 A (NC) @ 30 V _{AC}
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

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

► Accessories

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

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)