

ISaGRAF® PAC

WinCon-8xx7 Embedded Controller with ISaGRAF Inside

Build-in Windows **CE.net 4.1** real time system

Intel Strong ARM CPU or compatible CPU

Build-in **ISaGRAF** Ver.3 SoftLogic

Supports **6** PLC automation languages: IEC 61131-3 Standard Languages (**5**) + Flow Chart (**1**)

Supports Microsoft **EVC++**

Supports Microsoft **VS.NET** (**VB.NET** & **C#.NET**).

WinCon-8x47 **Dual-LAN** PAC

WinCon-8047/8347/8747 (ISaGRAF)

Dual 10/100M Ethernet ports

Dual USB ports



Microsoft
Embedded Visual C++

Microsoft
Visual Studio.net

Microsoft
Windows CE.net

The ICP DAS ISaGRAF Dual-LAN PAC (WinCon-8047/8347/8747) is a WinCE based SoftLogic PAC, with Windows CE Operating System and supports popular programming software: ISaGRAF Ver.3 , Microsoft EVC++ and VS.NET 2003.

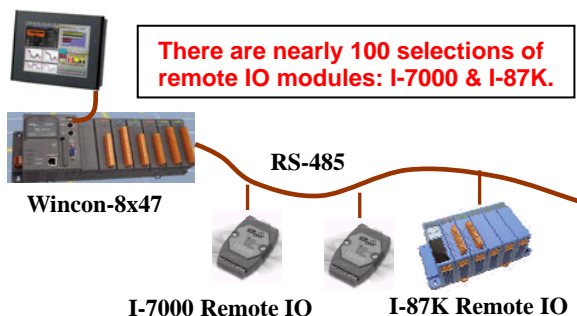
The ISaGRAF Dual-LAN PAC build-in with dual Ethernet 10/100M ports to implement higher network performance, network security, and redundancy capability. Its dual USB host ports support more connectivity to USB mouse, keyboard and other compatible I/O devices.

The ISaGRAF PAC supports ISaGRAF Ver.3 Workbench :

- IEC61131-3 Standard Open PLC Programming Languages: Ladder, Function Block, SFC, ST, IL and Flow Chart.
- Auto-scan I/O
- Simulate program even without controller beside
- Debug on-line
- Control on-line
- Simple graphic HMI



• Remote I/O Application

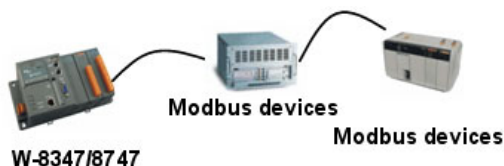


• SMS: Short Message Service



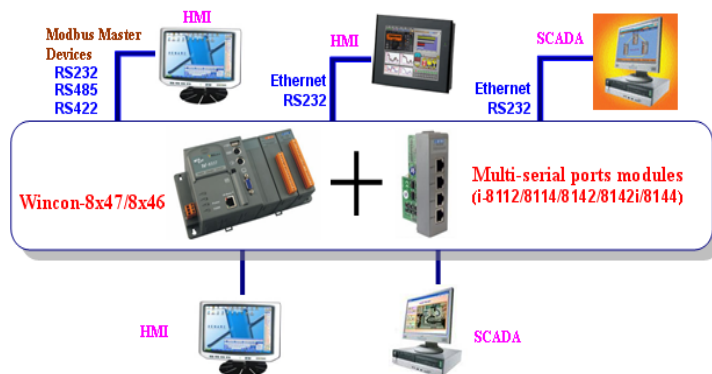
• Modbus Master (RTU, ASCII, RS232/485/422)

- COM2:RS232 or COM3:RS485
- COM5~COM14: if i-8112/14/42/42i/44 in Slot 1~5
- Link to Modbus PLC & M-7000 I/O & Modbus devices (Power meter, temperature controller, inverter etc.)

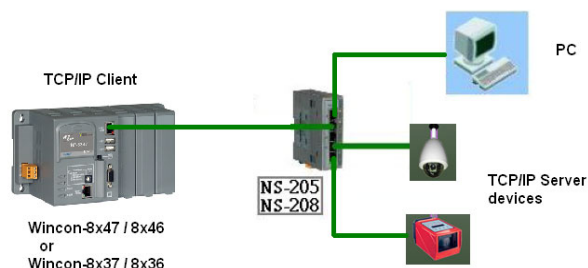


• Modbus RTU/TCP Slave Ports

- Modbus RTU(RS232/485/422): max. 5 PC/HMI/SCADA connection
- Modbus TCP/IP: max. 8 PC/HMI/SCADA connection



• Communicate With Other TCP/IP Server device



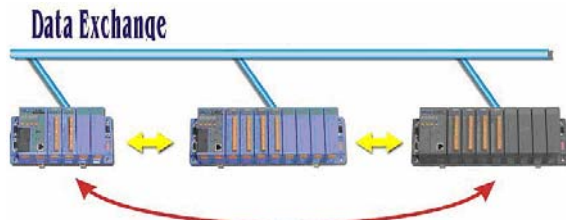
• Motion Control

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

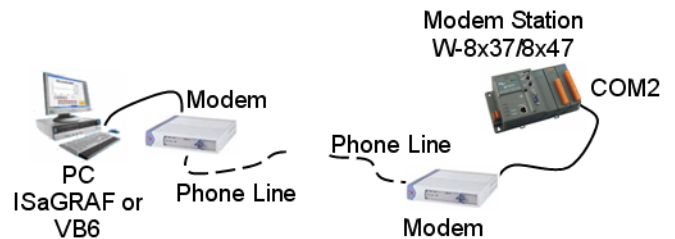


• Data Exchange (Ethernet: Ebus)

- PAC to PAC
- Through Ethernet

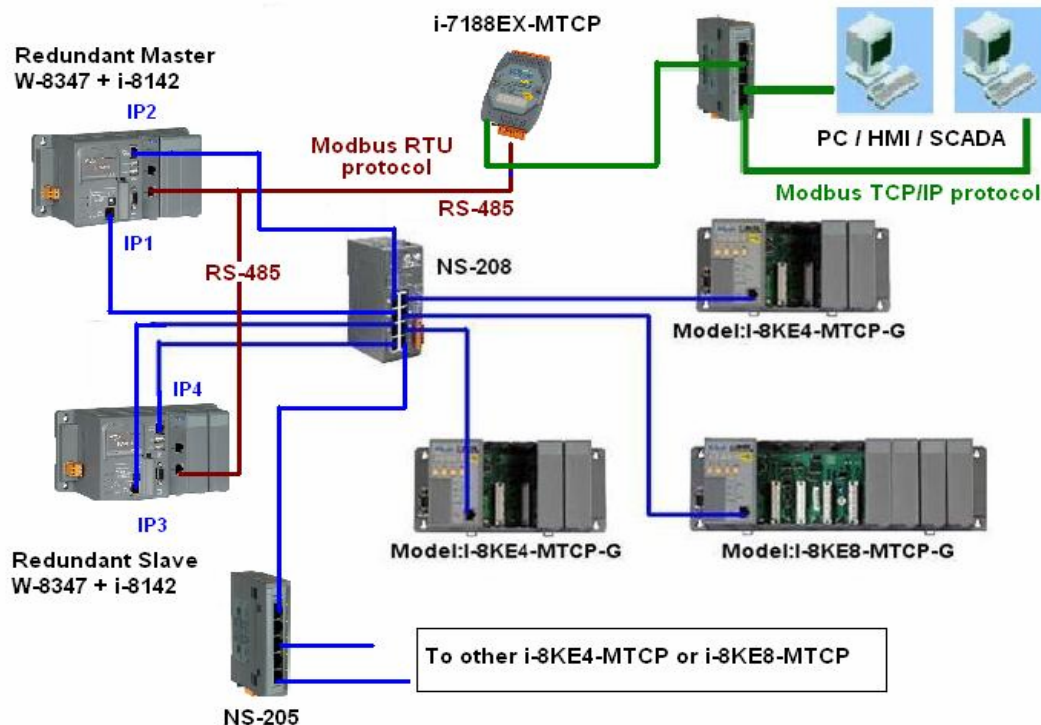


• Modem_Link download & monitor



• Uninterruptable Redundancy 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.
- PC/HMI/SCADA can connect to this redundancy system with only one IP of i-7188EX-MTCP.

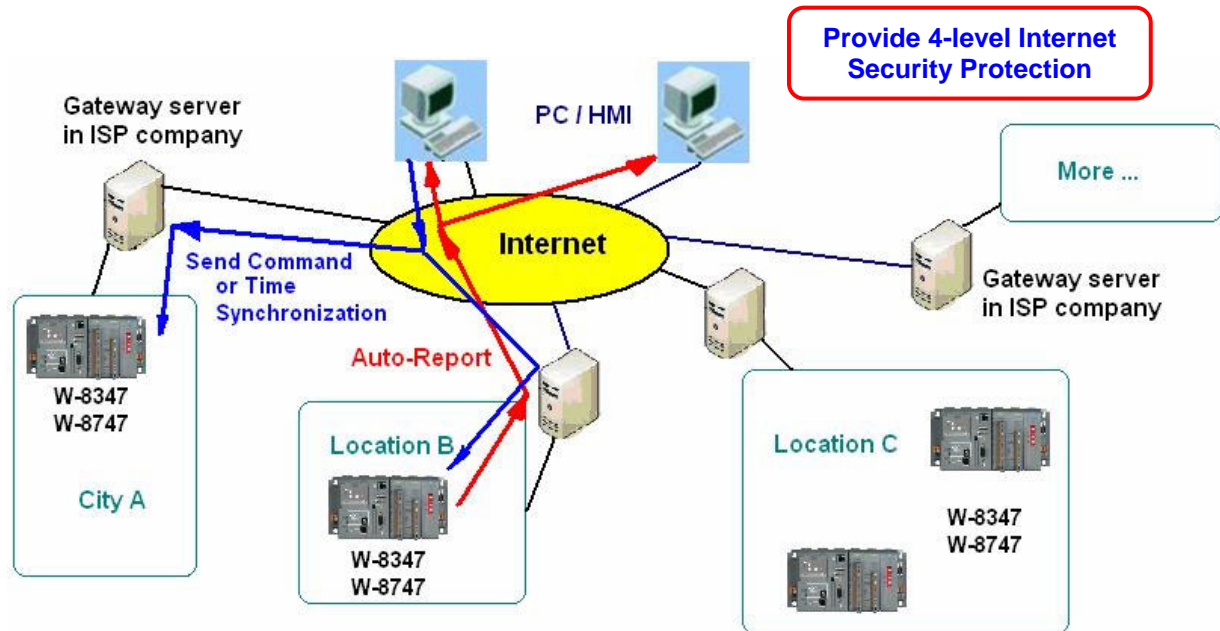


Wincon-8347 redundant system can connect max. 24 nodes of i-8KE4/8-MTCP I/O

● Auto-report acquisition data & control data

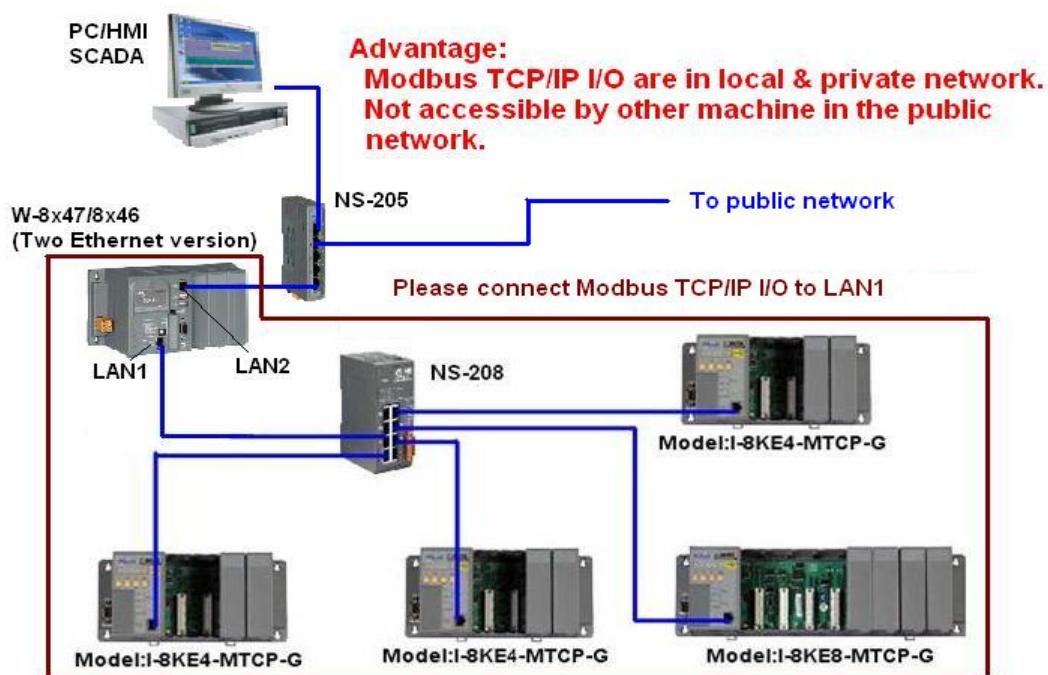
W-8347/8747 can use UDP IP or TCP/IP Client to auto-report acquisition data & control data to local or remote internet PC/Server.

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



● Supports Ethernet I/O

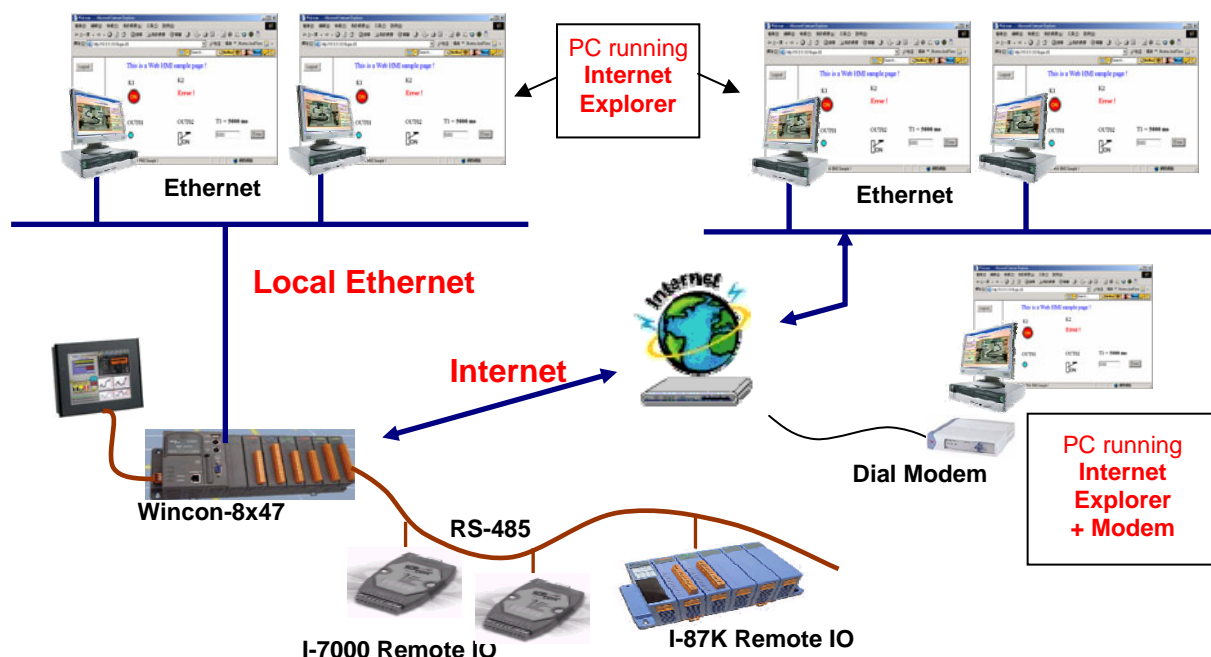
WinCon-8x47 connects Modbus TCP/IP Ethernet I/Os (i-8KE4/8-MTCP) to provide a fast-safe- local-private network.












One Wincon can connect up to 24 nodes of i-8KE4-MTCP or i8KE8-MTCP

Application **ISaGRAF® PAC**

- **Multiple Web HMI -- monitor & control everywhere!**



Ordering Information

ISaGRAF PAC		W-8047 (blue) W-8047-G (gray)	0-slot ISaGRAF Wincon PAC (W-8047 doesn't support S-256 / S-512)
		W-8347 (blue) W-8347-G (gray)	3-slot ISaGRAF Wincon PAC
		W-8747 (blue) W-8747-G (gray)	7-slot ISaGRAF Wincon PAC
SRAM		S-256 / S-512	256K / 512K bytes battery backup SRAM (for retained variable)
Application Software		ISaGRAF-256-E	ISaGRAF Workbench Software Ver.3 + one English application book
		ISaGRAF-256-C	ISaGRAF Workbench Software Ver.3 + one Chinese application book
Application Book		ISaGRAF Book-E / ISaGRAF Book-C	ISaGRAF application book (-E: English / -C: Traditional Chinese)
Ethernet Switch		NS-205 / NS-208	Unmanaged 5-port / 8-Port Industrial 10/100 Base-T Ethernet Switch with Plastic Case (RoHS)
LED Display		EKAN-ME122M	16x96 pixel, 64x384mm, 48W@24VDC char size: 8x6 or 16x8 pixel
		EKAN-ME124M	16x192 pixel, 64x768mm, 90W@24VDC char size: 8x6 or 16x8 pixel

	ISaGRAF Version 3 : IEC61131-3 standard. Languages: LD, ST, FBD, SFC, IL & FC
Max. code size	W-8047/8347/8747 accepts max. 1M bytes ISaGRAF code size (Appli.x8m must < 1M)
Non-ISaGRAF	Options: Microsoft EVC++4.0 or VS.NET 2003 (VB.NET, C#.NET)
Web HMI	Supports Web HMI function, PC running Internet Explorer can access to the Wincon-8047/8347/8747 via Local Ethernet or Internet or dial Modem, monitoring and Control.
Security	Web HMI supports three level username and password protection
Power supply	10 to 30VDC (unregulated), 20W (when I/O slots are empty)
Protection	Built-in power protection & network protection circuit
General environment	Operating: -25°C to +75°C , Storage : -30°C to +85°C, Humidity: 5 to 95 % (non-condensed)
System	
CPU & Watchdog timer	Intel Strong ARM CPU, 206MHz, or compatible. Watchdog: Yes
Real time clock	Gives hour, minute, sec, date of week, date of month, month & year
SDRAM & FLASH Memory	SDRAM: 64M bytes, FLASH Memory: 32M bytes for OS image
Compact Flash Card	One Compact Flash slot: CF memory card is 128M bytes or more
EEPROM	16K bytes, retention > 100 years. 1,000,000 erase/write cycles
I/O slots	I/O slots: W-8047: 0 , 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 to 255, set by software
Unique Serial Number	64-bit hardware unique serial number
Serial ports	
COM1	Internal use for I-87K serial IO boards of W-8347 & W-8747. W-8047 has no COM1
COM2	RS232: full modem signals, Speed: 115200 bps max.
COM3	RS-485, Speed: 115200 bps max. D+, D-
Two Ethernet ports	LAN1 & LAN2, 10/100M bps, NE2000 compatible, 10 BaseT, Program download port. Please use NS-205 / NS-208 Industrial Ethernet Switch.
Motion	W-8347/8747 integrate with one I-8091(2-axes) or two I-8091(4-axes) can do motion control
PWM output	8 channels max. 250Hz max. for Off=2 & On=2 ms . Output square curve: Off: 2 to 32766 ms, On: 2 to 32766 ms. Optional D/O boards: i-8037, 8041, 8042, 8054, 8055, 8056, 8057, 8060, 8063, 8064, 8065, 8066, 8068, 8069 (Relay boards can not generate fast square curve)
Counters	
Parallel D/I counter	8 ch. max. for 1 controller. Counter val: 32 bit. 250Hz max. Min. ON & OFF width must > 2ms. Optional D/I boards: i-8040, 8042, 8051, 8052, 8053, 8054, 8055, 8058, 8063, 8077
Serial D/I counter	Counter input: 100Hz max. Counter value: 0 to 65535 (16 bit) Optional serial I-87K D/I boards: i-87051, 87052, 87053, 87054, 87055, 87058, 87063
Remote D/I counter	All remote I-7000 & I-87K D/I modules support counters. 100Hz max. value: 0 to 65535
High speed counter	i-87082: 100kHz max. 32 bit, i-8080: 450kHz max. 32 bit
Protocols	
Modbus serial protocol (RTU slave)	Up to 5 COM ports (COM2, 3, 5, 6, 7 or 8) can support Modbus RTU slave protocol for connecting ISaGRAF, PC/HMI/OPC Server & HMI panels.
Modbus TCP/IP slave 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) as remote I/O. Max. 255 I-7000/87K remote I/O modules for one controller
M-7000 series Modbus I/O	Max. 10 R-485 ports – COM3 & (COM5 to COM14 if I-8142/8142i/8144 are found) can support M-7000 series Modbus I/O. Each port can connect up to 32 M-7000 Modules.
Modbus TCP/IP IO	LAN2 supports ICP DAS Ethernet I/O : I-8KE4-MTCP and I-8KE8-MTCP listed at http://www.icpdas.com/faq/isagraf.htm 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)
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 to COM14 if I-8112/8114/8142/8144 is found)
FRNET I/O	W-8xx7 can support max 7 pcs. i-8172 boards in slot 1 to 7 to connect to FRNET I/O modules, like FR-2053, FR-2057 FR-32R, FR-32P, at http://www.icpdas.com/faq/isagraf.htm FAQ-048 Each i-8172 board can connect up to 256 D/I plus 256 D/O channels.
Ebus	to exchange data between ICP DAS's ISaGRAF Ethernet controllers 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: M1206 or GM29 (GSM 900/1800)
User defined protocol	User can write his own protocol applied at COM2, COM3, (& COM4 to COM14 if multi-serial port boards are plugged) by serial communication function blocks.
Modem_Link	COM2 supports PC 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.
CPU Redundant Solution With Two Wincon controllers	One is Master, one is slave. Master handles all inputs & outputs of the RS-485 I/O (I-7k & I-87K modules) at run time. If master is dead, Slave will take over the control of RS-485 I/O (or I-8KE4/8-MTCP I/O). All outputs should be configured as RS-485 I/O (or I-8KE4/8-MTCP I/O). Inputs can locate at slot 1 to 7 or configured as RS-485 I/O (or I-8KE4/8-MTCP I/O). Modbus RTU slave I/O or devices can also be used in the redundant system. At least one I-7k or I-87K I/O module must be used in this system. Change Over Time: <= 500 ms, Synchronization: <= 75ms.
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: 256kbytes, S512: 512kbytes Note: W-8047 doesn't support S-256 / S-512
File Access	The Compact Flash card can be used for storing run time data & any controller setting with file operation (by f_XXX function block). The CF card size default is 128Mbytes, can be more.