# WinCON 8000

## Compact Windows CE.NET Controller

# Hardware User's Manual

### REV 4.1.0.01a    2003/10/3

**Warranty**

All products manufactured by ICP DAS are warranted against defective materials for a period of one year from the date of delivery to the original purchaser.

**Warning**

ICP DAS assumes no liability for damages consequent to the use of this product. ICP DAS reserves the right to change this manual at any time without notice. The information furnished by ICP DAS is believed to be accurate and reliable. However, no responsibility is assumed by ICP DAS for its use, nor for any infringements of patents or other rights of third parties resulting from its use.

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# • Introduction

# • Package List & Release Note

**Package List**

In addition to this manual, the package includes the following items:

- One set of WinCon 8000 hardware
- One Compact Flash Memory Card for storing system files
- One hardware user's manual (this manual)
- One release note
- One software utility CD with Software User's Manual included

**Note**

If any of these items are missing or damaged, contact the local distributors for more information. Save the shipping materials and cartons in case you want to ship in the future.

**Release Note**

It is recommended that you read the **release note & README.TXT** first. The release note is included in the box. And the README.TXT is given in the CD\README.TXT. Some important information is provided in the release note & CD\README.TXT

**Ordering Information**

Call distributor for details.

# • **WinCon 8000 Series**

The WinCon 8000 is the flagship compact embedded controller manufactured by ICP DAS. Its leading technology gives you all of the best features of both traditional PLCs and Windows capable PCs. The WinCon 8000 system is powered by Windows CE.NET and brings Windows programming style and skill into the world of PC-based PLCs. Application developers can directly develop their own programs in Microsoft's Visual Studio .NET and Embedded Visual tools with the WinCon SDK, and then download them into WinCon 8000 for use. Or, they can port their favorite SCADA software onto WinCon 8000 for even easier application development. For SCADA applications, we also provide a product model embedded with InduSoft Web Studio run-time version to meet this need.



The model type of WinCon-8000 is defined as W-8X3X, as shown in the above figure. The Second number shows the number of slots coming with the main controller unit. Currently, we provide two types: 3 and 7 slots. The last number defines the application platform and may be 1, 0, 7 or 9. 1 stands for the Master controller and it means that users need to design the application program by themselves. 0 represents the slave controller and it means ICP DAS will provide a firmware in the system to run the default application. However, this function will be released in the future and depends on client requests. The number 7 indicates the IsaGraf soft PLC application platform and that means the user can develop and run

the soft PLC program within the controller. The number 9 provides the SCADA application platform with InduSoft Web studio Run-time version on the system. And that means the user can use the development tool InduSoft Web studio to develop the application and download it to the controller. For more detailed product specifications, please refer to the following product model table.

| Model | Description | CPU Speed | Embedded OS | Slot | Flash | SDRAM | Peripherals |
|-------|-------------|-----------|-------------|------|-------|-------|-------------|
| W-8331 W-8731 | Embedded Controller | 206MHz | Windows CE .NET | 3 7 | 32 Mbyte | 64Mbyte | 10BaseT Ethernet Port×1 |
| W-8337 W-8737 | ISaGRAF Embedded Controller | 206MHz | Windows CE .NET | 3 7 | 32 Mbyte | 64Mbyte | VGA Port×1 CF Slot×1 USB×1 |
| W-8339 W-8739 | InduSoft Embedded Controller | 206MHz | Windows CE .NET | 3 7 | 32 Mbyte | 64Mbyte | PS/2 Keyboard×1 PS/2 Mouse×1 RS-232×1 RS-485×1 FRnet×1(Option) |

# • Contents of CD and CF memory card

## CD :
- **WinCon8000 SDK**
- **WinCon Utilities**
- **Source code for demo programs**
- **Software User's Manual**
- **InduSoft User's Manual**

**References are given in ReadMe.txt in the CD**

## CF memory card (default is 128 Mbytes):
- **WinCon8000 System files**
- **WinCon Utilities**
- **Demo programs**
- **InduSoft system (for W-8739/W-8339 only)**
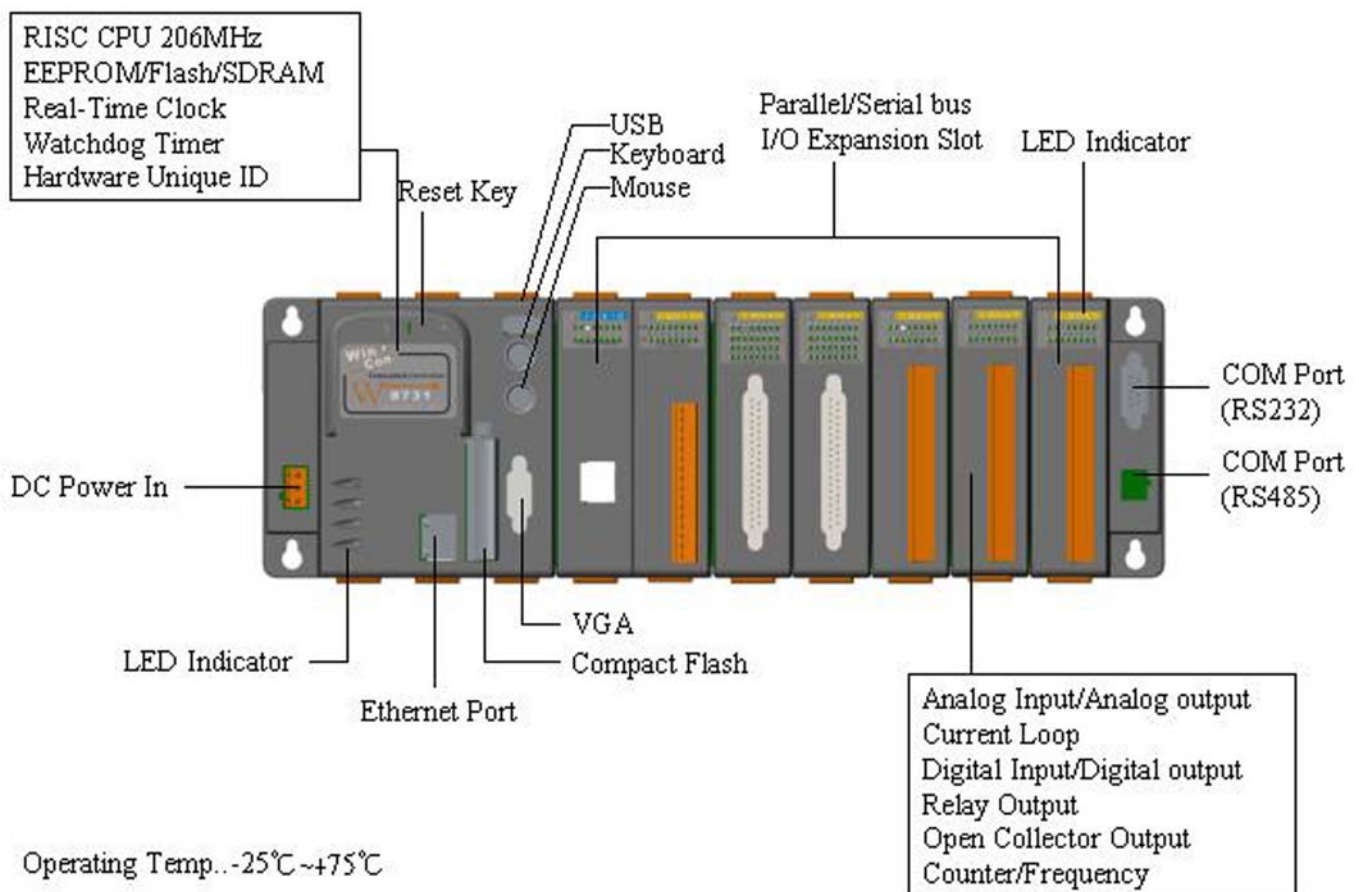- **Directories for FTP server and Http server**

**References are given in Software User's Manual bundled CD**

# • Hardware Information

The WinCon 8000 system competes in performance with Industrial PCs, but is lower in price. The system provides VGA and PS/2 keyboard/mouse ports for local visualization and management. Users' control programs and data can be saved in persistent storage via Compact Flash and USB interfaces. Also, there is communications capability via the built-in Ethernet and RS 232/485 interfaces.

# • Front View of WinCon8000

The following figure shows the WinCon8000 hardware. Included are the main controller with HMI, serial communication, FR net interface and I/O expansion interface.

# • **Specifications**

| Main Control Unit | |
|---|---|
| ■ Intel Strong ARM CPU, 206MHz<br>■ SRAM: 64M bytes<br>■ Flash Memory: 32M bytes<br>■ EEPROM: 16K bytes<br>■ 64-bit hardware unique serial number<br>■ Built-in Watchdog Timer<br>■ Real Time Clock | ■ 10 Base T: NE2000 compatible<br>■ 1 VGA port:<br>   320x240x16 to 1024x768x16<br>   Default is 640x480x16<br>■ 2 PS/2 port: Keyboard and Mouse<br>■ 1 Compact Flash slot: CF memory card<br>■ 1 USB 1.1 Host: USB drive or USB mouse<br>■ Reset button<br>■ Power LEDs |

| Cabinet |
|---|
| ■ COM0: Internal use<br>■ COM1: Serial Control for 87K Series Modules in Slots<br>■ COM2: RS-232<br>■ COM3: RS-485<br>■ FRnet(Option)<br>■ I/O Expansion Slots:<br>   3-slot for W-8331<br>   7-slot for W-8731 |
| ■ Power Supply: 20W, Unregulated +10Vdc to +30Vdc |
| ■ Environment:<br>   Operating Temp.: -25°C to +75°C<br>   Storage Temp.: -30°C to +85°C<br>■ Humidity: 5~95% |
| ■ Dimensions:<br>   418x110x75.5mm(7 slot)<br>   418x110x75.5mm(3 slot) |
| ■ I/O module (optional)<br>   I-8000 serial modules, which include DI, DO, AO, AI...<br>   I-87K serial modules, which include DI, DO, AO, AI...<br>   I-7000 serial modules, which include DI, DO, AO, AI... (external, via RS-485 port)<br>For more information, please refer to the relevant catalog or http://www.icpdas.com. |

# • **Applications**

The following figure shows the general application areas and structure. Com2 is the standard RS232 interface, which can be connected with a modem. Com3 is the RS-485 interface, which can be used to control ICP DAS DCON I-7000 serial modules, I-8000 controllers and I-87K expansion racks. The FRnet system is an optional control interface.
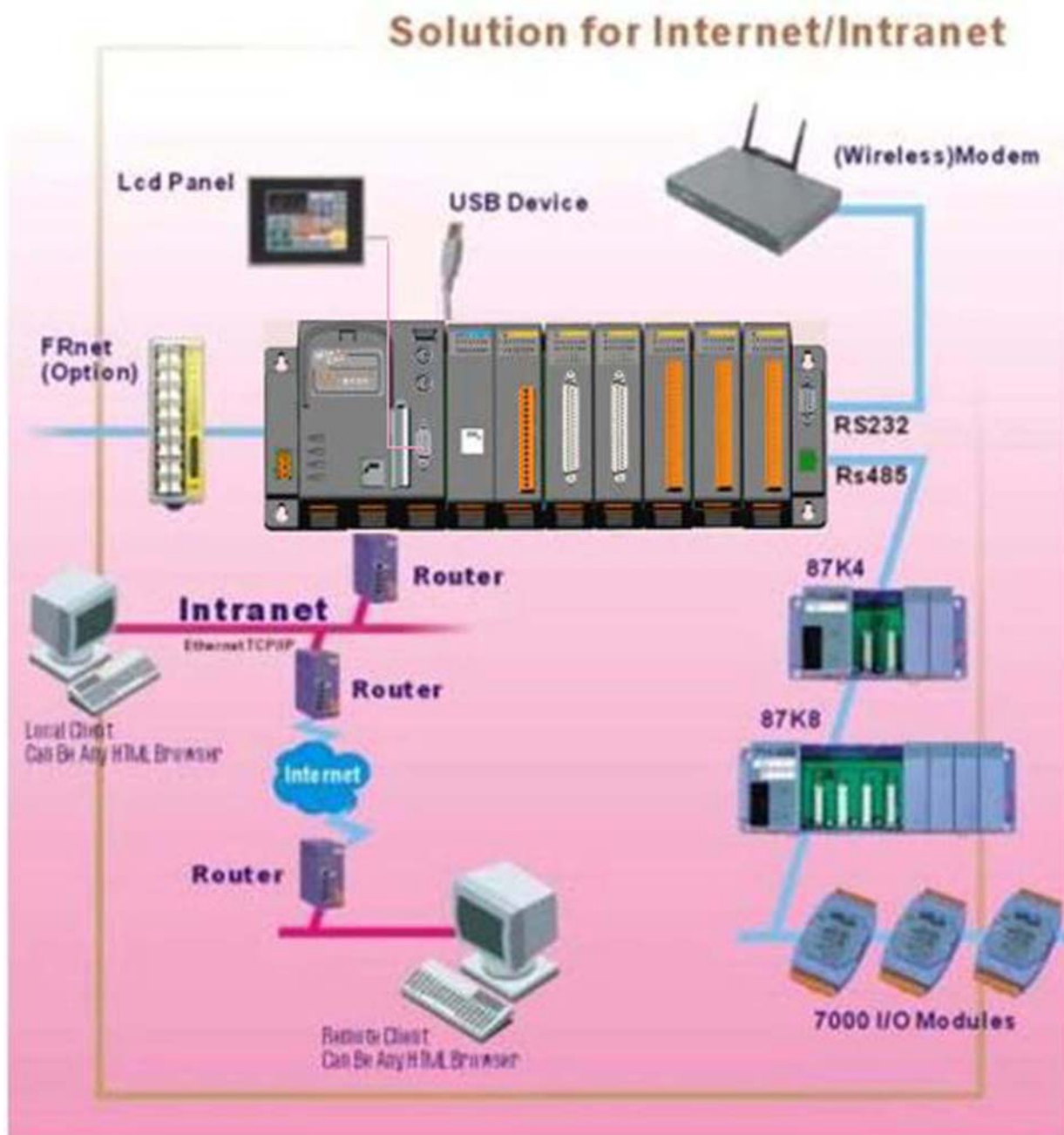
# • **Quick Start**

**Step 1. Make sure the bundled CF memory card is in the CF slot.**
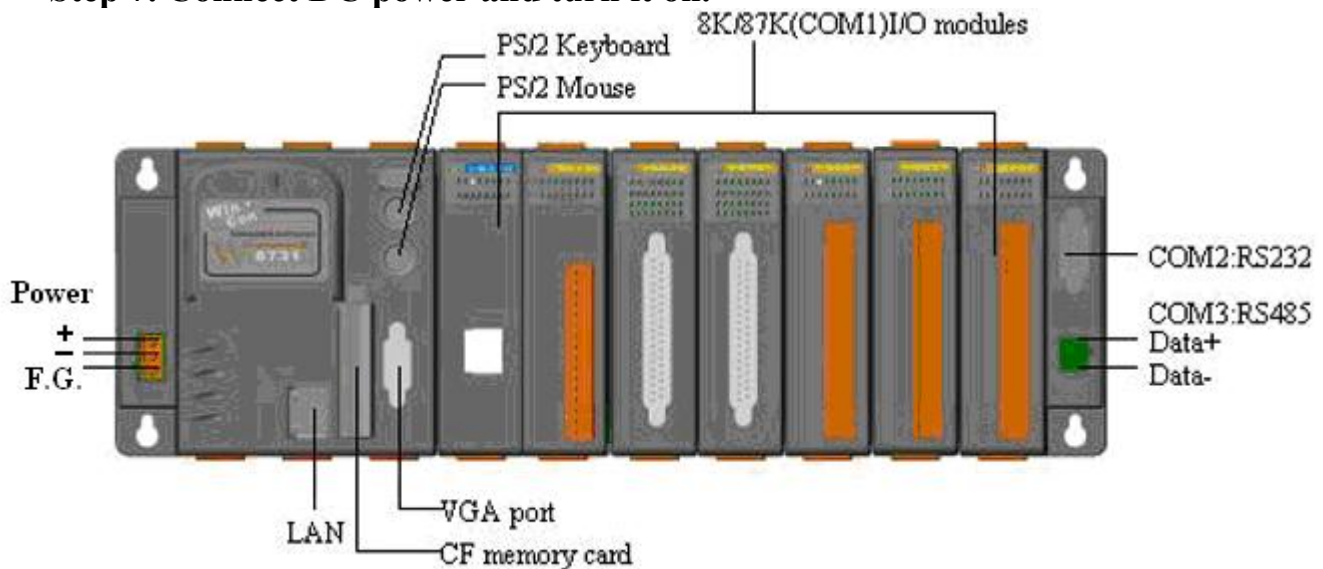**Step 2. Plug in your PS/2 keyboard and mouse.**
**Step 3. Plug in your VGA monitor.**
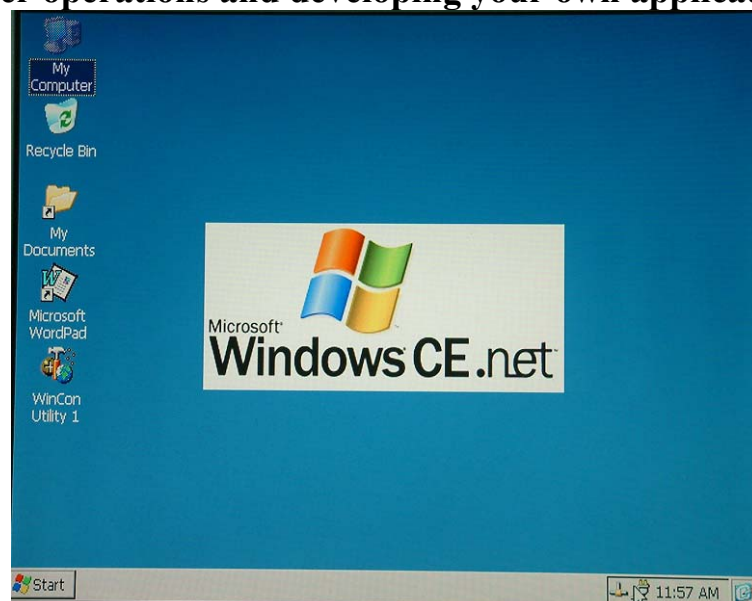**Step 4. Connect the WinCon8000 to your LAN**
**Step 5. Insert your 8K/87K series I/O modules into the I/O expansion slots.**
**Step 6. Connect the COM ports to your external devices.**
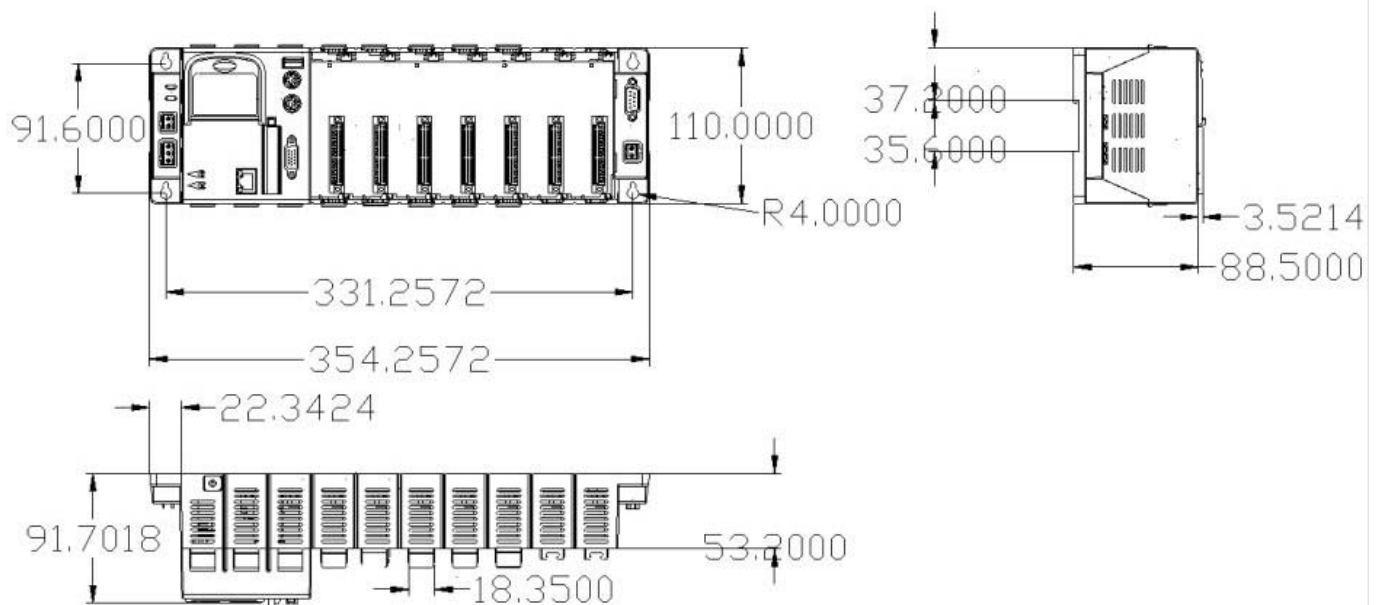**Step 7. Connect DC power and turn it on.**



**Step 8. Windows CE .NET starts up.  Please refer to the software user's manual for further operations and developing your own applications.**
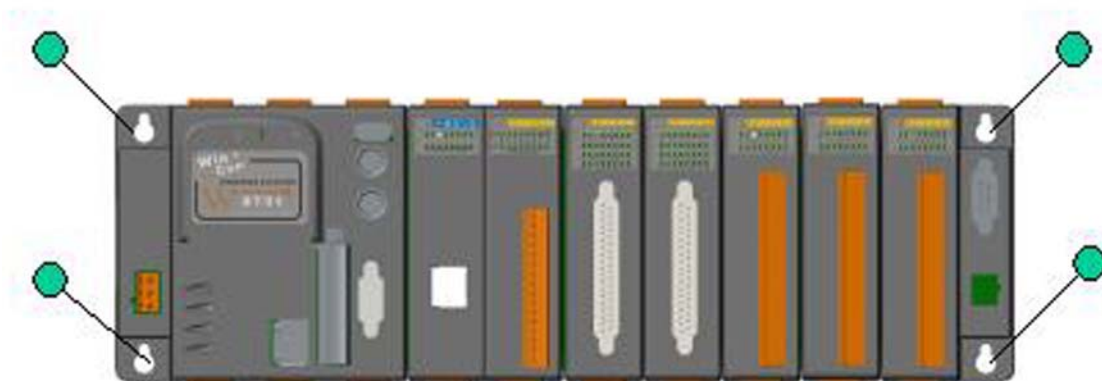
# • Mechanical Information

## 5.1 Dimensions



## 5.2 DIN Rail Mounting



## 5.3 Wall Mounting

# 5.4 Controller cover

A cover protects the reset button and provides note writing areas on the top of the WinCon.  The I/O Unit area is used to record what expansion modules are placed in each slot.   The Memo area is for general use.   The access procedure is as below:

**Step 1: Use hand to push down the cover.**
**Step 2: Swing open the cover, as shown in the below figure.**

The Expansion I/O setting record is on the main controller unit. The memo area is on the inside of the cover, as shown below.  Note that the reset key access hole is at the upper right corner of the protected area.



|        (a)        |        (b)        |        (c)        |