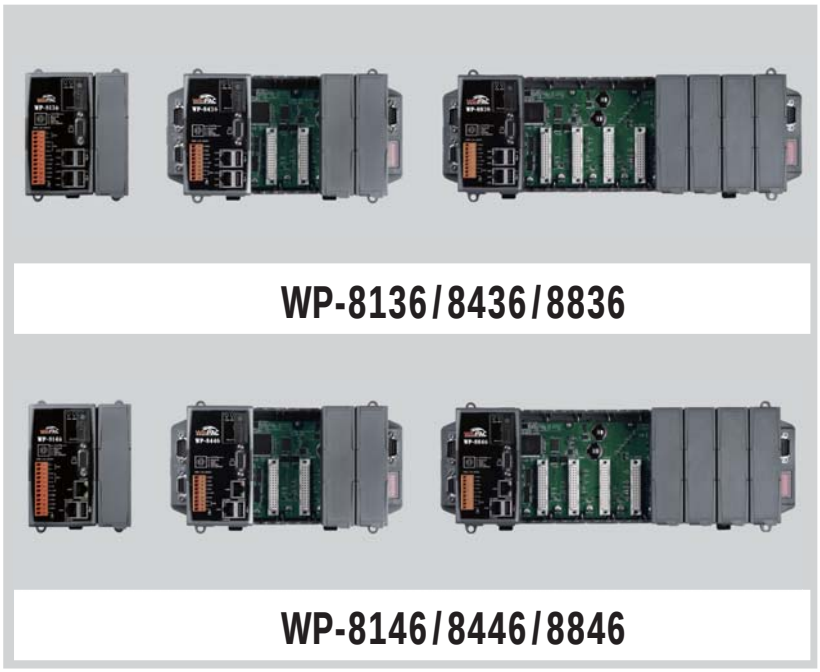


WP-8136/8436/8836

WP-8146/8446/8846

Highlight Information

- Windows CE.NET 5.0
- Hard Real-Time Capability
- Fast Boot Speed
- InduSoft Runtime Inside
- ISaGRAF Ver.3 SoftLogic Inside (IEC61131-3)
- PXA270 CPU (32-bit & 520 MHz)
- 128 MB SDRAM & 128 MB Flash (for WP-8x36)
- 128 MB SDRAM & 96 MB Flash (for WP-8x46)
- 64-bit Hardware Serial Number for Software Protection
- 1/4/8 I/O Slots
- Support VGA (800 × 600 /1024 × 768)
- Support microSD Socket
- Dual 10/100M Ethernet Ports
- Dual USB Ports (for WP-8x36)
- 2/4 Series Ports (RS-232/485)
- Real-time Control and Data Acquisition
- Dual-WinPAC Redundant System
- Operating Temperature: -25 ~ +75 °C

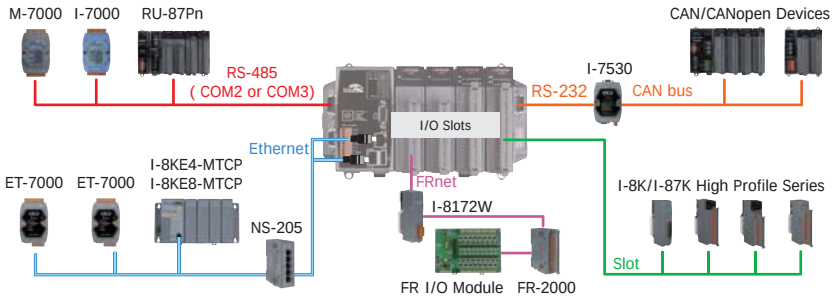
Introduction

ICP DAS WinPAC-8xx6 Series (WP-8136/8436/8836/8146/8446/8846) is the new generation WinCE based PAC (Programmable Automation Controller). It features the powerful InduSoft Web Studio and ISaGRAF SoftLogic. InduSoft is the most powerful, integrated collection of automation tools that includes all the building blocks needed to develop Human Machine Interface (HMI) and Supervisory Control and Data Acquisition (SCADA) systems. ISaGRAF is the most powerful PLC-like SoftLogic software package and supports all five IEC61131-3 languages (LD, ST, FBD, SFC, FC).

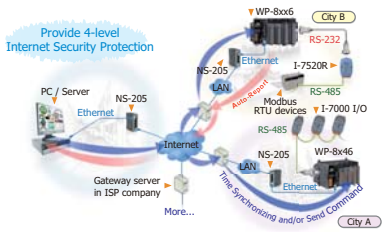
WP-8x36 and WP-8x46 is equipped PXA270 CPU (520 MHz) running a Windows CE .NET 5.0 operating system, various connectivity (VGA with an extra GPU, USB, Ethernet, RS-232/485) and 1/4/8 slots for high performance parallel I/O modules (high profile I-8K series) and serial-type I/O modules (high profile I-87K I/O modules). Its operating system, Windows CE 5.0, has many advantages, including hard real-time capability, small core size, fast boot speed, interrupt handling at a deeper level, achievable deterministic control and low cost.

Applications

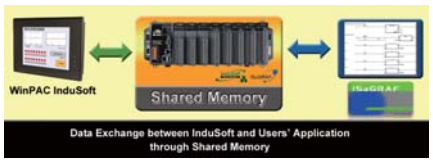
Rich I/O Expansion Ability



Cost-effective Auto-Report Data Acquisition/Control System



Data Exchange through Shared Memory



SNMP Protocol Supported

Features

Software

- Windows CE.NET 5.0 Operating System
- Easy Remote Maintenance Via Ethernet
- Built-in OPC Server: Quicker
- Simply Copy and Play to Upgrade Applications
- Pre-installed Run-time InduSoft v6.1 SP3
  - ☐ Support Microsoft .NET, OPC, DDE, ODBC, XML
  - ☐ Support Modbus RTU/TCP Protocol
  - ☐ Full-Featured WinCE-based Run-time Environment
  - ☐ Communication Driver of ICP DAS is Provided
- Pre-installed ISaGRAF Ver.3 SoftLogic
  - ☐ Support IEC 61131-3 Standard
  - ☐ Provide 6 PLC languages
  - ☐ Easy Integrating to HMI/SCADA/MMI
  - ☐ Support Modbus RTU/TCP protocol and Motion Control
  - ☐ Support off-line simulation
  - ☐ Support on-line debugging, monitoring and control

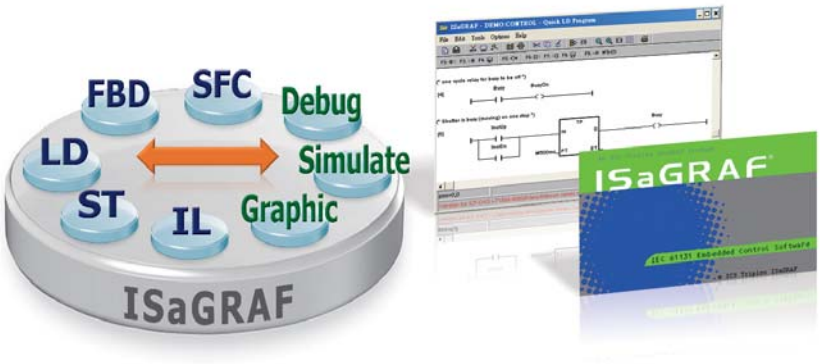
Hardware

- Powerful CPU Module
- Built-in VGA Port with Extra GPU
- 64-bit Hardware Serial Number for Software Protection
- Rich I/O Expansion Ability
- I/O Module Hot Swap Ability
  - * Will be available
  - (For High Profile I-87K Modules Only)
- Built-in 63 MB Flash Disk (for WP-8x36)
- Built-in 31 MB Flash Disk (for WP-8x46)
- Dual Watchdog Timers
- Dual Battery Backup SRAM (512 KB)
- Dual Ethernet Ports
- Dual USB Ports (for WP-8x36)
- Redundant Power Inputs
- DIN-Rail or Wall Mounting
- Operating Temperature: -25 ~ +75 °C

Specifications

Models		WP-8136	WP-8146	WP-8436	WP-8446	WP-8836	WP-8846
System Software							
OS		Windows CE 5.0					
.Net Compact Framework		2.0					
Embedded Service		FTP server, Web server (supports VB script, JAVA script), Embedded SQL server					
Multilanguage Support		English, German, French, Spanish, Russian, Italian, Portuguese-BR, Simplified Chinese, Traditional Chinese, Korean					
Development Software							
InduSoft Software		InduSoft Web Studio v6.1 Service Pack 6					
ISaGRAF Software		ISaGRAF Version 3: IEC 61131-3 standard. Languages: LD, ST, FBD, SFC, IL & FC					
Others		Options: Microsoft EVC++4.0 or VS .NET 2003/2005/2008 (VB .NET 2003/2005/2008, C# .NET 2003/2005/2008)					
Web Service							
Web HMI		Support Web HMI function, PC running Internet Explorer can access to the WP-8x36 via Local Ethernet or Internet or dial Modem, monitoring and control.					
Security		Web HMI supports three levels user name and password protection					
CPU Module							
CPU		PXA270 or compatible (32-bit and 520 MHz)					
SDRAM		128 MB					
Dual Battery Backup SRAM		512 KB (for 5 years data retain)					
Flash	Total size	128 MB	96 MB	128 MB	96 MB	128 MB	96 MB
	OS image	64 MB		64 MB		64 MB	
	Built-in Flash disk	63 MB	31 MB	63 MB	31 MB	63 MB	31 MB
	Registry	1 MB		1 MB		1 MB	
EEPROM		16 KB					
		Data Retention: 40 years; 1,000,000 erase/write cycles					
microSD		microSD socket with one 2 GB microSD card (support up to 16 GB microSDHC card)					
RTC (Real Time Clock)		Provide second, minute, hour, date, day of week, month, year					
64-bit Hardware Serial Number		Yes					
Dual Watchdog Timers		Yes					
Programmable LED Indicator		1					
Rotary Switch		Yes (0 ~ 9)					
DIP Switch		-		Yes (8 bits)			
LED, NET ID		1 programmable LED indicator. NET ID: From 1 ~ 255, set by software					
VGA & Communication Ports							
VGA	Extra GPU	Yes	-	Yes	-	Yes	-
	Resolution	1024 x 768, 800 x 600, 640 x 480	800 x 600, 640 x 480	1024 x 768, 800 x 600, 640 x 480	800 x 600, 640 x 480	1024 x 768, 800 x 600, 640 x 480	800 x 600, 640 x 480
Ethernet		RJ-45 x 2, 10/100 Base-TX (Auto-negotiating, LED indicators)					
USB 1.1 (host)		2	1	2	1	2	1
COM 0		Internal communication with the high profile I-87K series modules in slots					
COM 1		RS-232 (to update firmware) (RxD, TxD and GND); non-isolated					
COM 2	RS-485	D2+, D2-; self-tuner ASIC inside					
	Isolation	2500 V_{DC}		3000 V_{DC}			
COM 3		-		RS-232/RS-485 (RxD, TxD, CTS, RTS and GND for RS-232, Data+ and Data- for RS-485); non-isolated			
COM 4		-		RS-232 (RxD, TxD, CTS, RTS, DSR, DTR, CD, RI and GND); non-isolated			
I/O Expansion Slots							
Slot Number		1		4		8	
		(For High Profile I-8K and I-87K Modules Only)					
Hot Swap * Will be available		For High Profile I-87K Modules Only					
Mechanical							
Dimensions (W x L x H)		95 mm x 132 mm x 111 mm		231 mm x 132 mm x 111 mm		355 mm x 132 mm x 111 mm	
Installation		DIN-Rail or Wall Mounting					
Environmental							
Operating Temperature		-25 ~ +75 °C					
Storage Temperature		-30 ~ +80 °C					
Ambient Relative Humidity		10 ~ 90% RH (non-condensing)					
Power							
Input Range		+10 ~ +30 V_{DC}					
Isolation		1 kV					
Redundant Power Inputs		Yes, with one power relay (1 A @ 24 V_{DC}) for alarm					
Capacity		1.0 A, 5 V supply to CPU and backplane, 0.6 A, 5 V supply to I/O expansion slots, 8 W in total		1.1 A, 5 V supply to CPU and backplane, 4.9 A, 5 V supply to I/O expansion slots, 30 W in total for WP-8441 25 W in total for WP-8431		1.2 A, 5 V supply to CPU and backplane, 4.8 A, 5 V supply to I/O expansion slots, 30 W in total for WP-8841 25 W in total for WP-8831	
Consumption		7.3 W (0.3 A @ 24 V_{DC})		9.1 W (0.38 A @ 24 V_{DC})		9.6 W (0.4 A @ 24 V_{DC})	

ISaGRAF Specifications



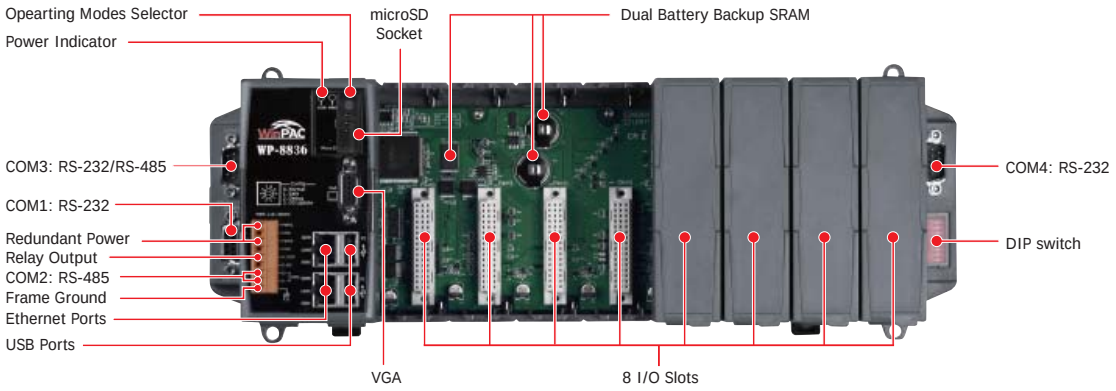
Protocols (some protocols need optional devices)		
Modbus TCP/IP Master		Link to max. 100 devices that support Standard Modbus TCP/IP Slave protocol
Modbus RTU/ASCII Master		Support Multi-port. Max. 10 ports: COM1 ~ 14 (Expansion boards must be plugged 1n slot 0 ~ 3) (WP-81x7 has no COM3 ~ 4)
Modbus RTU Slave		Max. 5 Ports: COM1, one of COM2/3, COM4 ~ 8 (WP-81x7 has no COM3 ~ 4)
Modbus TCP/IP Slave		Ethernet LAN1 & LAN2 support total up to 32 connections. 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 I-7000 I/O modules, I-87K base + I-87K Serial I/O boards and RU-87Pn + I-87K High Profile I/O boards as Remote I/O. Max. 255 modules for one controller. (WP-81x7 has no COM3)
M-7000 Series Modbus I/O		Max. 10 RS-485 ports (COM1 ~ 14) can support M-7000 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. If LAN2 is broken, it will switch to LAN1 automatically to continuously work. (LAN1 & LAN2's IP are requested set in the same IP domain)
FRnet I/O		Max. 8 pcs. I-8172W boards in slot 0 ~ 7 to connect to FRnet I/O modules
Send Email		Supports functions to send email with one attached file via Ethernet port.
Ebus		LAN2 to exchange data between ISaGRAF Ethernet PAC via Ethernet port.
SMS: Short Message Service		One of COM4/5 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.
User-Defined Protocol		COM1 ~ COM14 by Serial communication function blocks
MMICON/LCD		COM4 or COM5 supports ICP DAS's MMICON.
UDP Server & UDP Client : Exchange Message & Auto-Report		LAN1 or LAN2 supports UDP Server and UDP Client protocol to send/receive message to/from PC/HMI or other devices.
TCP Client : Exchange Message & Auto-Report		LAN1 or LAN2 supports TCP Client protocol to send/receive message to/from PC/HMI or other devices which support TCP server protocol. Ex: 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 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-8xx7 is currently active. 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. 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.
CAN/CANopen		COM1, 3, 4 or COM5 ~ COM14 can connect one I-7530 (converter: RS-232 to CAN) to support CAN/CANopen devices and sensors. One WP-8xx7 supports max.10 RS-232 ports to connect max.10 I-7530.
Optional I/O Functions		
PWM Output	High Speed PWM Module	I-8088W, 8-ch PWM outputs, 10 Hz ~ 500 kHz (non-continuous), duty: 0.1 ~ 99.9%
	DO Module as PWM	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, 8041AW...etc.
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...
	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-A5...
	Remote DI Counter	All I-7K/I-87K DI modules support counters. 100 Hz max. value: 0 ~ 65535
	High Speed Counter	I-87082W: 100 kHz max.; I-8084W: 250 kHz max.
	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. I-8084W: 250 kHz max. , 4-ch encoder, can be dir/pulse, or up/down or A/B phase (Quad. mode), No support Encoder Z-index.
	Frequency	I-87082W: 2-ch, 1 Hz ~ 100 kHz; I-8084W: 8-ch, 1 Hz ~ 250 kHz
Motion	Motion Control	with one I-8091W (2-axis) or two I-8091W (4-axis)

InduSoft Features

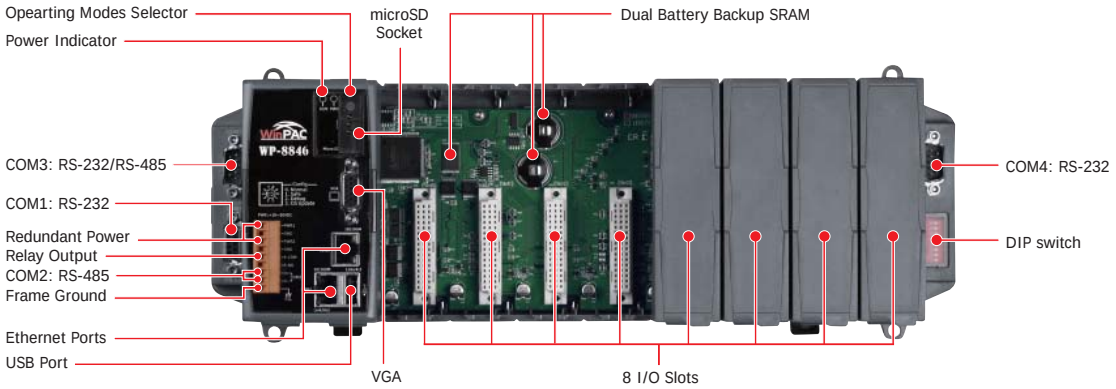
- Elegant Graphics
- Multi-Language
- Database (Access, Excel, SQL, Oracle...)
- Recipes and Reports
- Online and History Alarm / Event / Trend
- Various Communication Driver (DCON, Modbus, OPC, DDE, TCP/IP...)
- Remote Web Client Control & Security
- ActiveX (GSM / SHM / COM /WEB provided by ICP DAS)
- System Redundancy
- Online Configuration and debugging
- Others (VBScript, E-mail, FTP, SNMP...)

Appearance

WP-8836



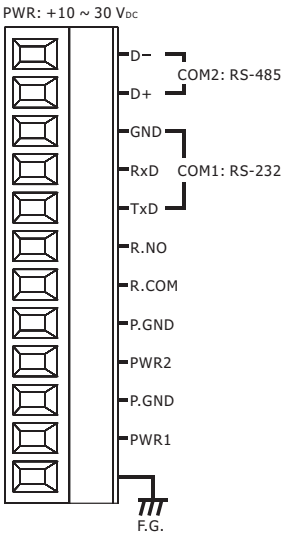
WP-8846



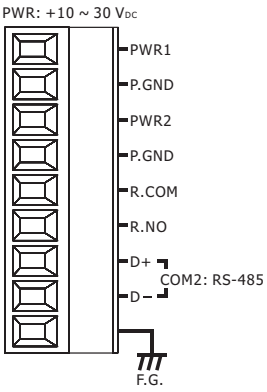
Pin Assignments

Terminal Block

WP-81x6

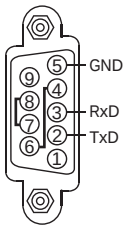


WP-84x6/88x6

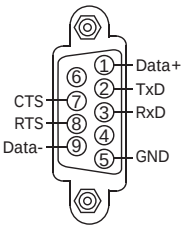


WP-84x6/88x6 COM Port

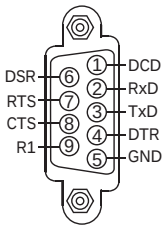
COM1: RS-232



COM3: RS-232/RS-485

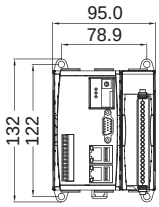


COM4: RS-232



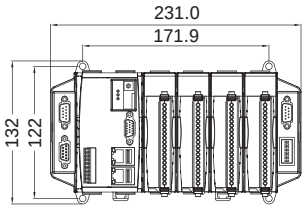
Dimensions (Unit: mm)

WP-8136



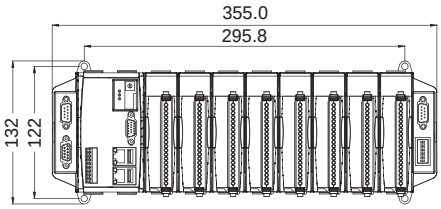
Front View

WP-8436



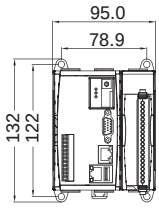
Front View

WP-8836



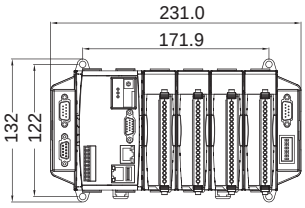
Front View

WP-8146



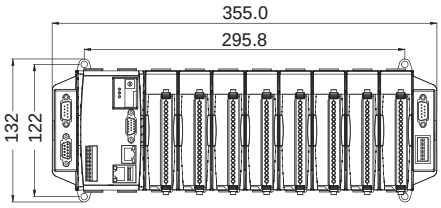
Front View

WP-8446



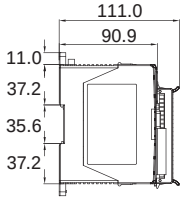
Front View

WP-8846



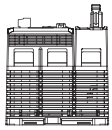
Front View

WP-8x36/8x46



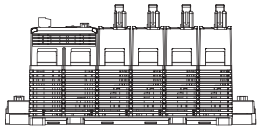
Left Side View

WP-81x6



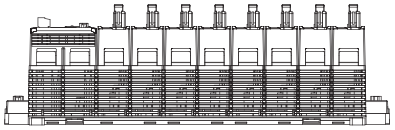
Bottom View

WP-84x6



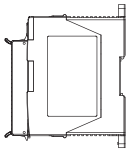
Bottom View

WP-88x6



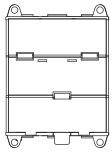
Bottom View

WP-8x36/8x46



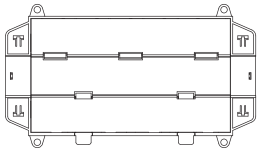
Right Side View

WP-81x6



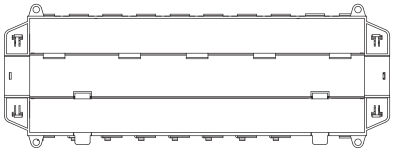
Back View

WP-84x6



Back View

WP-88x6



Back View

Ordering Information

WP-8136-EN	WP-8146-EN	InduSoft and ISaGRAF based WinPAC-8000 with 1 I/O Slot (Multilanguage Version of OS)
WP-8436-EN	WP-8446-EN	InduSoft and ISaGRAF based WinPAC-8000 with 4 I/O Slots (Multilanguage Version of OS)
WP-8836-EN	WP-8846-EN	InduSoft and ISaGRAF based WinPAC-8000 with 8 I/O Slots (Multilanguage Version of OS)
WP-8136-TC	WP-8146-TC	InduSoft and ISaGRAF based WinPAC-8000 with 1 I/O Slot (Traditional Chinese Version of OS)
WP-8436-TC	WP-8446-TC	InduSoft and ISaGRAF based WinPAC-8000 with 4 I/O Slots (Traditional Chinese Version of OS)
WP-8836-TC	WP-8846-TC	InduSoft and ISaGRAF based WinPAC-8000 with 8 I/O Slots (Traditional Chinese Version of OS)
WP-8136-SC	WP-8146-SC	InduSoft and ISaGRAF based WinPAC-8000 with 1 I/O Slot (Simplified Chinese Version of OS)
WP-8436-SC	WP-8446-SC	InduSoft and ISaGRAF based WinPAC-8000 with 4 I/O Slots (Simplified Chinese Version of OS)
WP-8836-SC	WP-8846-SC	InduSoft and ISaGRAF based WinPAC-8000 with 8 I/O Slots (Simplified Chinese Version of OS)
Note: The default runtime license (CEView Lite Plus - 300 tags and 3 driver) is installed.		

Accessories

ISaGRAF Development Software	
ISaGRAF-256-E	ISaGRAF Workbench Software Ver.3 (256 I/O Tags) with One Application Book (English version) and one USB Dongle
ISaGRAF-256-C	ISaGRAF Workbench Software Ver.3 (256 I/O Tags) with One Application Book (Chinese version) and one USB Dongle
ISaGRAF-32-E	ISaGRAF Workbench Software Ver.3 (32 I/O Tags) with One Application Book (English version) Note: Do not offer upgrade service from ISaGRAF-32 to ISaGRAF-256
ISaGRAF-32-C	ISaGRAF Workbench Software Ver.3 (32 I/O Tags) with One Application Book (Chinese version) 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)
InduSoft Development Software	
InduSoft-NT512000D	Advanced Server for Windows NT/2000/XP (512,000 Tags, unlimited drivers)
InduSoft-NT64000D	Control Room for Windows NT/2000/XP (64,000 Tags, 8 drivers)
InduSoft-NT4000D	Operator Workstation for Windows NT/2000/XP (4,000 Tags, 5 drivers)
InduSoft-NT1500D	Local Interface for Windows NT/2000/XP (1500 Tags, 3 drivers)
InduSoft-NT300D	NTView PRO for Windows NT/2000/XP (300 Tags, 3 drivers)
InduSoft Runtime License	
InduSoft-CE1500R	CEView standard for Windows CE Run-time (CE View)(1500 Tags, 3 drivers)
InduSoft-CE300R	CEView Lite Plus for Windows CE Run-time (300 Tags, 3 drivers)
Power Supply	
DP-660	24 VDC/2.5 A, 60 W and 5 VDC/0.5 A, 2.5 W Power Supply with DIN-Rail Mounting
DP-1200	24 VDC/5.0 A, 120 W Power Supply with DIN-Rail Mounting
MDR-20-24	24 VDC/1.0 A, 24 W Power Supply with DIN-Rail Mounting
MDR-60-24	24 VDC//2.5 A, 60 W Power Supply with DIN-Rail Mounting