

XP-8037-CE6



XP-8337-CE6



XP-8137-CE6



XP-8737-CE6

ISaGRAF based XP-8000-CE6

Features

- x86 CPU, 1.0 GHz, dual-core
- Windows CE 6.0
- Embedded ISaGRAF Ver.3 SoftLogic (IEC 61131-3)
- Hard Real-Time Capability
- VGA Port Output
- Modbus RTU/TCP (Master, Slave)
- Support eLogger HMI
- Support Motion Control - Using I-8094F/8094/8092F
- Redundant Power Inputs
- Operating Temperature: -25 ~ +75 °C

Introduction

The XP-8x37-CE6 Series (XP-8037-CE6/XP-8137-CE6/XP-8337-CE6/XP-8737-CE6) is the new generation ISaGRAF PAC from ICP DAS. Each is equipped with an x86 CPU (1 GHz) dual-core running a Windows Embedded CE 6.0 operating system, a variety of input/output ports (VGA, USB, Ethernet, RS-232/485), and a range of I/O slots (0/1/3/7) that can be used to integrate high performance parallel I/O modules (high profile I-8K Series) or serial I/O modules (high profile I-87K series).

The benefits of running Windows CE 6.0 on an XPAC device include hard real-time capabilities, small core size, fast boot speed, interrupt handling at a deeper level, and achievable deterministic control. XPAC devices are also capable of running ISaGRAF and PC-based control software, such as Visual Basic .NET, Visual C#, etc., providing all of the best features of both traditional PLCs and Windows capable PCs.

Major advantage compared with the WP-8xx7 and VP-2xW7 :

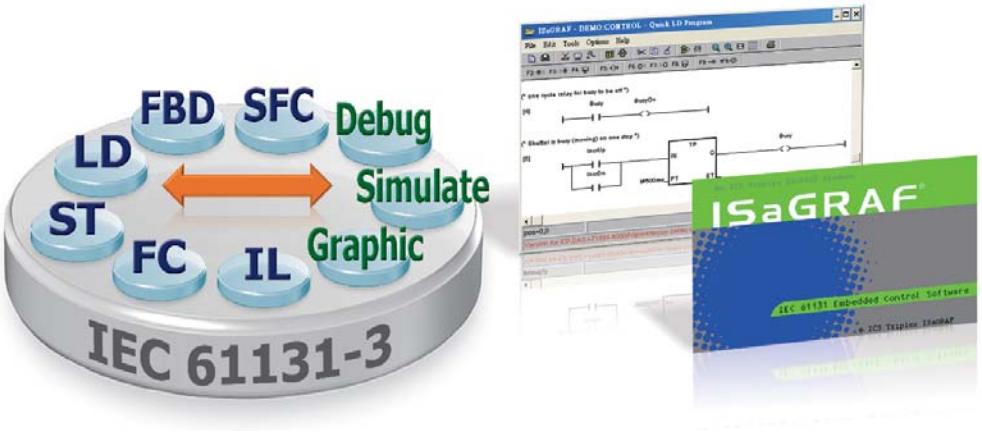
- The USB-mouse operations and Ethernet communication of the XP-8x37-CE6 are more effective (consume less CPU loading) than the WP-8xx7 and VP-2xW7.
- The memory size (Flash and SDRAM) of the XP-8x37-CE6 is much more than the WP-8xx7 and VP-2xW7.

ISaGRAF Features

ISaGRAF is the most powerful SoftLogic package on the market, and is a PLC-like software suite application that supports IEC 61131-3 standard PLC programming languages (LD, FBD, SFC, ST, IL) and Flow Chart (FC). ISaGRAF can be used to execute applications generated by the ISaGRAF workbench on any ISaGRAF PAC.

The features of the ISaGRAF workbench Ver. 3.x include:

- IEC 61131-3 Standard Open PLC Programming Languages (LD, FBD, SFC, ST, IL) + Flow Chart (FC)
- Auto-scan I/O
- Online Debugging/Control/Monitoring, Offline Simulation
- Simple Graphic HMI
- Support eLogger HMI



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PAC Specifications

Models		XP-8037-CE6	XP-8137-CE6	XP-8337-CE6	XP-8737-CE6
System Software					
OS		Windows CE 6.0 R3 Core			
.Net Compact Framework		3.5			
Embedded Service		FTP Server, ASP (Java Script, VB Script), SQL Compact Edition 3.5			
SDK Provided		Dll for Visual Studio .Net 2005/2008			
Multilanguage Support		English, German, French, Spanish, Portuguese, Russian, Italian, Japanese, Simplified Chinese, Traditional Chinese			
Development Software					
ISaGRAF Software	ISaGRAF Ver.3	IEC 61131-3 standard.			
	Languages	LD, ST, FBD, SFC, IL & FC			
	Max. Code Size	2 MB			
	Scan Time	3 ~ 15 ms for normal program; 15 ~ 50 ms (or more) for complex or large program			
Non-ISaGRAF		Options: VS.NET 2005/2008 (VB.NET, C#.NET)			
CPU Module					
CPU		x86 CPU, 1.0 GHz, dual-core			
System Memory		2 GB DDR3			
Non-volatile Memory, MRAM		512 KB (retain memory without battery support)			
Flash		32 GB			
EEPROM		16 KB (Data Retention: 40 years; 1,000,000 erase/write cycles)			
CF Card		8 GB (support up to 32 GB)			
RTC (Real Time Clock)		Provides seconds, minutes, hours, date, day of the week, month, year			
LED Indicator		1 x System, 1 x Power, 2 x Programmable			
64-bit Hardware Serial Number		Yes, for Software Copy Protection			
Dual Watchdog Timers		Yes			
Rotary Switch		Yes (0 ~ 9)			
DIP Switch		-	Yes (8 bits)		
VGA & Communication Ports					
VGA		Yes (Resolution: 1024 x 768, 800 x 600, 640 x480)			
Ethernet		RJ-45 x 2, 10/100/1000 Base-T (Auto-negotiating, Auto MDI/MDI-X, LED indicators)			
USB 2.0		4			
COM 1		RS-232 (RxD, TxD and GND); non-isolated	Internal communication with the high profile I-87K series modules in slots		
COM 2		RS-232 (RxD, TxD and GND); non-isolated			
COM 3		RS-485 (D2+, D2-) with internal self-tuner ASIC; 3000 VDC isolated			
COM 4		RS-232/RS-485 (RxD, TxD, CTS, RTS and GND for RS-232, Data+ and Data- for RS-485); non-isolated			
COM 5		RS-232 (RxD, TxD, CTS, RTS, DSR, DTR, CD, RI and GND); non-isolated			
I/O Expansion Slots					
Number of Slots		0	1	3	7
		Note: For High Profile I-8K and I-87K Modules Only			
Mechanical					
Dimensions (W x L x H)		137 x 132 x 125 (mm)	169 x 132 x 125 (mm)	231 x 132 x 125 (mm)	355 x 132 x 125 (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 VDC			
Isolation		1 kV			
Redundant Power Inputs		Yes, with one power relay (1 A @ 24 VDC) for alarm			
Capacity		20 W	20 W	35 W	35 W
Consumption		12 W (0.5 A @ 24 VDC)	16.6 W (0.69 A @ 24 VDC)	16.8 W (0.7 A @ 24 VDC)	18 W (0.75 A @ 24 VDC)

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ISaGRAF Specifications

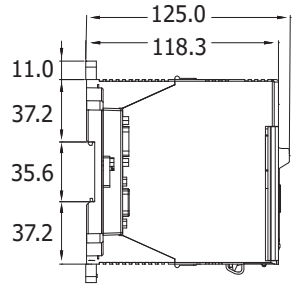
Protocols (Note that certain protocols require optional devices)		
Net ID		1 ~ 255, user-assigned by software
Modbus TCP/IP Master		Link to a max. of 100 devices that support the Standard Modbus TCP/IP Slave protocol (FAQ-113)
Modbus RTU/ASCII Master		A max. of 32 ports (COM1 ~ 33) (*) (To connect to other Modbus Slave devices)
Modbus RTU Slave		A max. of 8 ports (COM1 ~ 33) (*) (For connecting ISaGRAF, PC/HMI/OPC Server and HMI panels)
Modbus TCP/IP Slave		Two Ethernet ports each supporting the Modbus TCP/IP Slave protocol for connecting ISaGRAF and PC/HMI. The two ports support up to 64 connections. Note: If the PAC uses 1 connection to connect to the PC/HMI, it can connect to up to 64 PCs/HMIs; If the PAC uses 2 connections to connect to each PC/HMI, it can connect to up to 32 PCs/HMIs; If one of the Ethernet port malfunctions, the other one can still be used to connect to the PC/HMI.
Web HMI Protocol		Ethernet ports for connecting a PC running Internet Explorer.
User-defined Protocol		Custom protocols can be applied at COM1~33 using Serial communication function blocks. (*)
I-7000 & I-87K RS-485 Remote I/O		One of COM3~4 supports I-7000 I/O modules, I-87K base + I-87K Serial I/O boards, or RU-87Pn + I-87K High Profile I/O boards as remote I/O. A max. of 255 I-7000/87K remote I/O modules can connect to one PAC. (*)
M-7000 Series Modbus I/O		A max. of 32 RS-485 ports (*). Each port can connect to 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 malfunctions, it will automatically switch to LAN1 to continuously work. (The IP address for LAN1 and LAN2 should be set in the same IP domain) (FAQ-042)
FRnet I/O		Enable a max. of 7 pcs. I-8172W boards in slot 1~7 to be used to connect to FRnet I/O modules, such as FR-2057, FR-32R. Each I-8172W board can link to a max. of 256 DI plus 256 DO channels. (FAQ-082, 154)
Send Email		Provide functions to send email with a single attached file via the Ethernet port.
Ebus		Used to exchange data between ICP DAS ISaGRAF Ethernet PACs via the Ethernet port. (LAN2 Port only)
SMS: Short Message Service		Either COM4 or COM5 can link to a GSM Modem to support SMS. The user can request data or control the controller via a cellular phone. The controller can also send data and alarms to the user's cellular phone. Optional GSM Modem: GTM-201-RS232 (850/900/1800/1900 GSM/GPRS External Modem)
MMICON/LCD		COM4 or COM5 supports the ICP DAS MMICON.
UDP Server & UDP Client : Exchange Message & Auto-report		LAN1 or LAN2 supports the UDP Server and UDP Client protocols allowing messages to be sent/received to/from a PC/HMI or other device. For example, data can be automatically reported to the InduSoft's RXTX driver.
TCP Client : Exchange Message & Auto-report		LAN1 or LAN2 supports the TCP Client protocol allowing messages to be sent/received to/from a PC/HMI or other device that supports the TCP server protocol.
GPRS/SMS		Enable the I-8212W (2G/3G) card allowing short messages to be sent/received to/from or to access a dial up connection to link to the Internet and using a GPRS connection to send an email or communicate with remote stations using the FTP Client (FAQ-151) or the TCP Client / UDP Server / UDP Client (FAQ-143) protocols.
SQL Client		Support for the SQL Client function that allows data to be written (or read from) a Microsoft SQL Server (2000 SP3, 2005, 2008).
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 PAC 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. (FAQ-138, 125)
CAN/CANopen		COM1, 2 and COM4~33 (*) can connect to one I-7530 (converter: RS-232 to CAN) to support CAN/CANopen devices and sensors. One PAC supports a max. of 32 RS-232 ports to connect a max. of 32 I-7530. (FAQ-086)
CANopen Master		Enable the I-8123W CANopen Master card to connect to other CANopen Slave devices. (FAQ-145)
HART Solutions		Enable I-87H17W modules in slots 1 to 7 to communicate with other HART devices.
FTP Client		Enable the FTP Client to upload files from the PAC to a remote FTP server on a PC. (FAQ-151)
eLogger HMI		Provide support for the eLogger HMI. The user can design the HMI screen using the eLogger on the PC and then download it to the PAC to display the HMI on the PAC. (FAQ-115)
Optional I/O Functions (Refer to the ISaGRAF PAC I/O Selection Guide for I/O Module list)		
PWM Output	High Speed PWM Module	I-7088, I-8088W, I-87088W: 8-ch PWM outputs, software support 1 Hz~100 kHz (non-continuous), duty cycle: 0.1 ~ 99.9%
	DO Module as PWM	Optional DO Boards: I-8037W, 8041W, 8041AW, 8042W, 8050W, 8054W, 8055W, 8056W, 8057W, 8060W, 8063W, 8064W, 8068W, 8069W. (Relay Output boards cannot generate fast square wave) Support max. 8-ch for one PAC; Max. frequency: 250 Hz for OFF=2 & ON=2 ms. Output square wave: OFF: 2~32766 ms, ON: 2~32766 ms.
Counter, Encoder, Frequency	Parallel DI Counter	Optional I-8K DI boards: I-8040W, 8040PW, 8042W, 8046W, 8048W, 8050W, 8051W, 8052W, 8053W, 8053PW, 8054W, 8055W, 8058W, 8063W. Support max. 8-ch for one PAC; Max. count/frequency: 32-bit, 250 Hz; Min. pulse width > 2 ms
	Serial DI Counter	Optional I-87K DI boards: I-87040W, 87046W, 87051W, 87052W, 87053W, 87053W-A5, 87054W, 87055W, 87058W, 87059W, 87063W. Max. count/frequency: 16-bit (0~65535), 100 Hz.
	Remote DI Counter	All remote I-7000 & I-87K DI modules support counters. Max. count/frequency: 16-bit (0~65535), 100 Hz.
	High Speed Counter	Max. count/frequency for I-87082W: 32-bit, 100 kHz Max. count/frequency for I-8084W: 32-bit, 250 kHz
	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. (FAQ-112) I-8084W: 250 kHz max., 4-ch encoder, Pulse/Direction or Up/Down or A/B Phase (Quad. mode). Not support Encoder Z-index. (FAQ-100)
	Frequency	I-87082W: 2-ch, 1 Hz ~ 100 kHz; I-87088W: 8-ch, 0.1 Hz ~ 500 kHz; I-8084W: 8-ch, 1 Hz ~ 250 kHz;
Motion	Motion Control	Can be integrated with one or several I-8092F (2-axis) or I-8094F/I-8094 (4-axis).

*** Note: The COM6 ~ COM33 ports are located in the expansion boards if they are installed in slots 1~7 of XP-8x37-CE6. The COM1 port on XP-8037-CE6 is RS-232; COM1 on other ISaGRAF XPAC is for internal communication with I-87K modules installed in slots only.**

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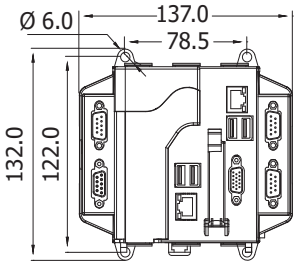
Dimensions

XP-8037-CE6

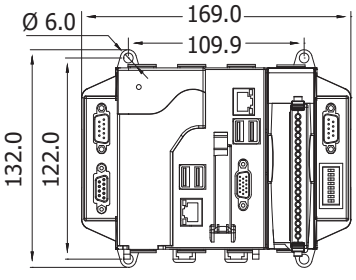


Side View

XP-8037-CE6

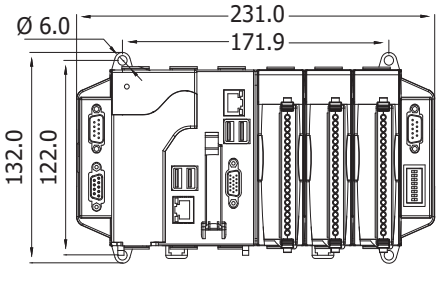


XP-8137-CE6

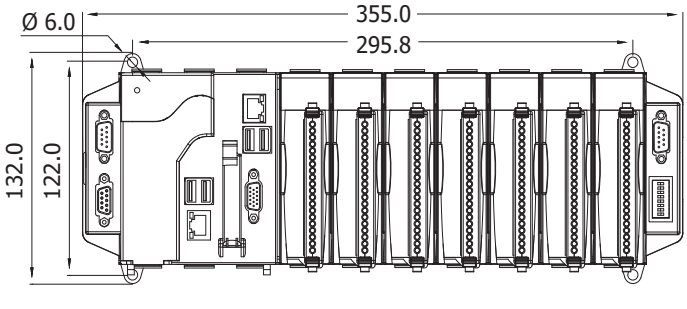


Front View

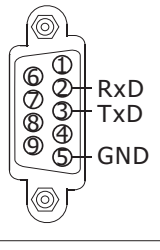
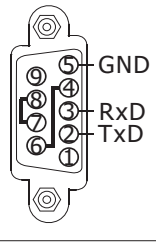
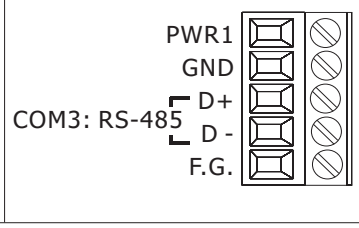
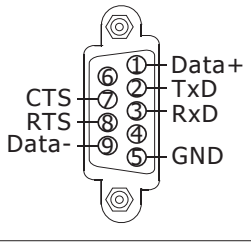
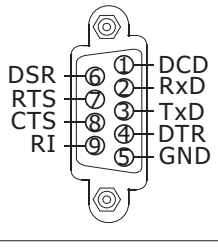
XP-8337-CE6



XP-8737-CE6



Pin Assignment

XP-8037-CE6	XP-8037-CE6/XP-8137-CE6/XP-8337-CE6/XP-8737-CE6			
COM1: RS-232	**COM2: RS-232**	**COM3: RS-485**	**COM4: RS-232/485**	**COM5: RS-232**
				

* Except for XP-8037-CE6, COM1 on other Win-GRAF XPAC is for internal communication with I-87K modules installed in slots only

Ordering Information

XP-8037-CE6 CR	0 I/O slot WinCE 6.0 Based ISaGRAF XPAC (OS: Multi-Language version) (RoHS)
XP-8137-CE6 CR	1 I/O slot WinCE 6.0 Based ISaGRAF XPAC (OS: Multi-Language version) (RoHS)
XP-8337-CE6 CR	3 I/O slots WinCE 6.0 Based ISaGRAF XPAC (OS: Multi-Language version) (RoHS)
XP-8737-CE6 CR	7 I/O slots WinCE 6.0 Based ISaGRAF XPAC (OS: Multi-Language version) (RoHS)
XPCE6-GUP-17000	Upgrade the XP-8x31-CE6 to become XP-8x37-CE6 (or Upgrade the XP-8x39-CE6 to become XP-8x36-CE6)

Related Products

ISaGRAF Development Software	
ISaGRAF-256	ISaGRAF Workbench Software Ver.3 (256 I/O Tags) with one USB Dongle

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