Features

- PXA270, 520 MHz CPU
- Windows CE 5.0
- ISaGRAF Ver.3 SoftLogic Inside (IEC 61131-3)
- Hard Real-Time Capability
- 3 I/O Slots
- IP65 Compliant Front Panel
- 3.5"/5.7"/10.4" TFT LCD
- Modbus RTU/TCP (Master, Slave)
- Support Soft-GRAF HMI
- Audio with Microphone-In and Earphone-Out
- Operating Temperature: -20 ~ +70°C

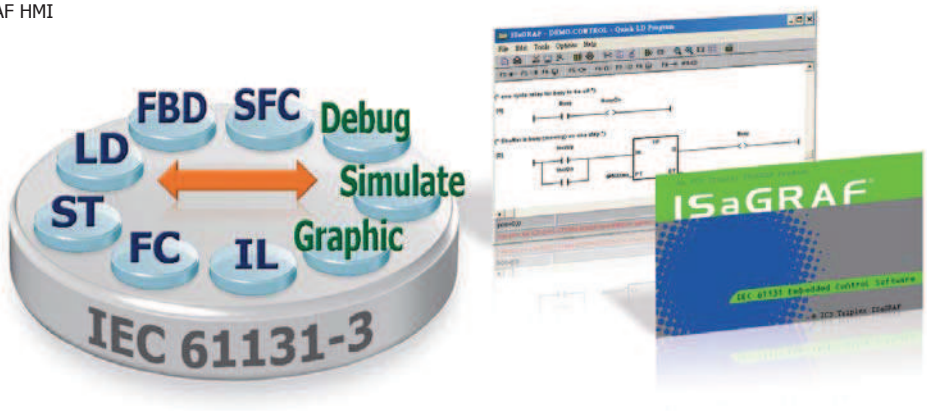
Introduction

VP-23W7/25W7/4137 are ISaGRAF based PACs which integarte a color graphic display and I/O expansion slots into a single unit. It is equipped with a PXA270 CPU (520 MHz), various connectivity (USB, Ethernet, RS-232/485), three I/O slots, a 3.5"/5.7"/10.4" TFT LCD and a rubber keypad. The benefits of running Windows CE 5.0 on VP-23W7/25W7/4137 include hard real-time capability, small core size, fast boot speed, interrupt handling at a deeper level and achievable deterministic control. VP-23W7/25W7/4137 is also capable of running ISaGRAF and PC-based control software such as Visual Basic .NET, Visual C#, ... etc.

ISaGRAF Features

ISaGRAF is the most powerful SoftLogic package on the market. ISaGRAF is a PLC-like software and it supports IEC 61131-3 standard PLC programming languages (LD, FBD, SFC, ST, IL, FC), and can run the application generated by the workbench on any ISaGRAF PACs. The ISaGRAF workbench Ver. 3.x features.

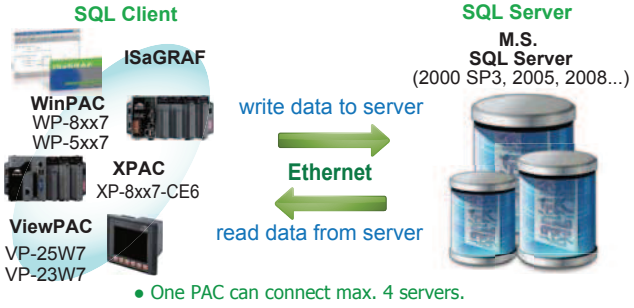
- IEC 61131-3 Standard Open PLC Programming Languages (LD, FBD, SFC, ST, IL, FC) + Flow Chart (FC)
- Auto-Scan I/O
- On-Line Debug/Control/Monitor, Off-Line Simulation
- Simple Graphic HMI
- Support Soft-GRAF HMI



Soft-GRAF Studio Colorful HMI

M2B Machine To Business Application

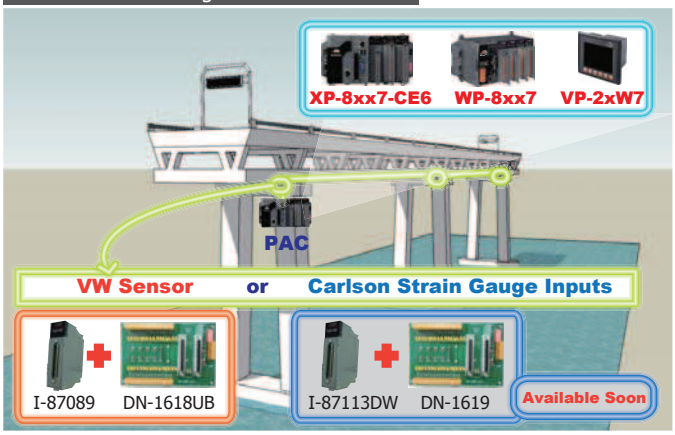
SQL Server Communication



• One PAC can connect max. 4 servers.

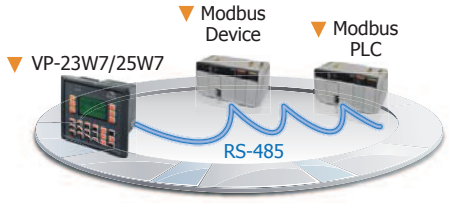
Modbus RTU/TCP Slave Ports

Stress Monitoring of Constructions

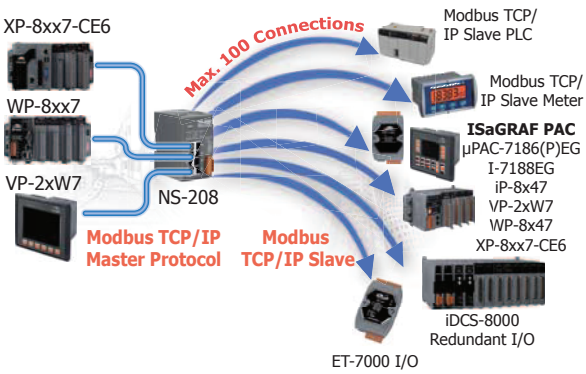


Modbus Master Ports

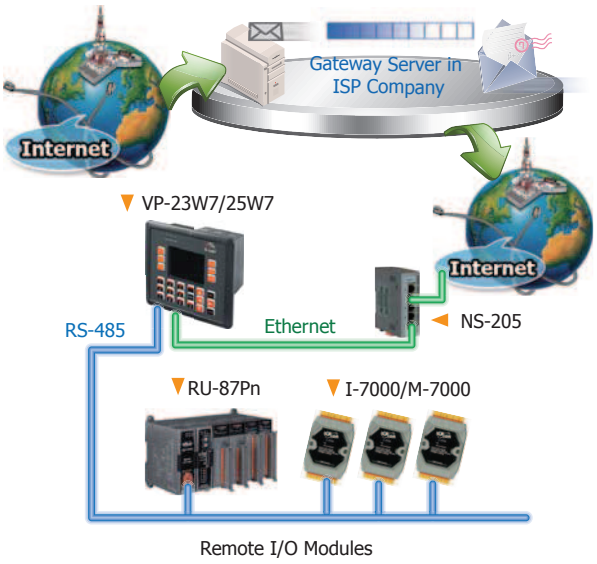
Modbus RTU/ASCII Master



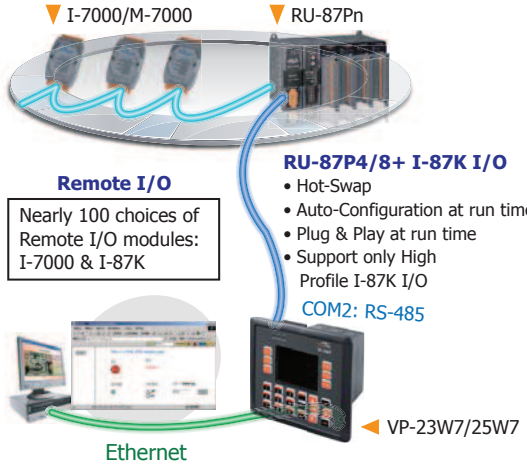
Modbus TCP/IP Master



Send Email with one Attached File



Remote I/O Application



Specifications

Models		VP-23W7	VP-25W7	VP-4137
System Software				
OS		Windows CE 5.0		
.Net Compact Framework		3.5		
Embedded Service		FTP server, Web server (supports VB script, JAVA script), Embedded SQL server		
SDK Provided		Dll for eVC, Dll for Visual Studio.Net 2005/2008		
Multilanguage Support		English, German, French, Spanish, Russian, Italian, Korean, Simplified Chinese, Traditional Chinese		
Development Software				
ISaGRAF Software	ISaGRAF Ver.3	IEC 61131-3 standard		
	Languages	LD, ST, FBD, SFC, IL & FC; Support Soft-GRAF HMI: XP-8xx7-CE6, WP-8xx7, VP-2xW7 and WP-5xx7 PAC		
	Max. Code Size	1 MB		
	Scan Time	3 ~ 15 ms for normal program 15 ~ 50 ms (or more)for complex or large program		
Non-ISaGRAF		Options: MS eVC++ 4.0 or VS .NET 2005/2008 (VB.NET, C# .NET)		
Web Service				
Web HMI		PC running Internet Explorer can monitor/control PAC via Internet/modem		
Security		Support three-level username and password protection. (high/middle/low)		
CPU Module				
CPU		PXA270, 520 MHz		
SDRAM		128 MB		
Flash		96 MB		128 MB
Expansion Flash Memory		microSD socket with one 2 GB microSD card (support up to 32 GB microSDHC card)		
Dual Battery Backup SRAM		512 KB; data valid up to 5 years (for retain variables)		
EEPROM		16 KB		
RTC (Real Time Clock)		Provide second, minute, hour, date, day of week, month, year		
64-bit Hardware Serial Number		Yes, for Software Copy Protection		
Dual Watchdog Timers		Yes (0.8 second)		
Rotary Switch		Yes (0 ~ 9)		
Communication Interface				
Ethernet		RJ-45 x 1, 10/100 Base-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators)		
USB 1.1 (host)		1		
USB 1.1 (client)		-		1
COM 0		Internal communication with the high profile I-87K series modules in slots		
COM 1		-		
COM 2		RS-485 (Data+, Data-) with internal self-tuner ASIC; 2500 VDC isolated		
COM 3		RS-232 (RxD, TxD, CTS, RTS, DSR, DTR, CD, RI and GND); Non-isolated		
MMI (Man Machine Interface)				
LCD		3.5" TFT (Resolution 320 x 240)	5.7" TFT (Resolution 640 x 480)	10.4" TFT (Resolution 800 x 600)
Touch Panel		-	Yes	
Rubber Keypad		24 keys	6 Keys	-
Audio		Microphone-In and Earphone-Out		Earphone-Out
LED Indicators		3 Dual-Color LEDs (PWR, RUN, LAN1, L1, L2, L3; L1 ~ L3 for User Programmable)		2 LEDs (PWR, RUN)
I/O Expansion Slots				
Slot Number		3		
		Note: For High Profile I-8K and I-87K Modules Only		
Mechanical				
Dimensions (W x L x H)		182 mm x 158 mm x 125 mm		293 mm x 231 mm x 129 mm
Installation		Panel Mounting		
Ingress Protection		Front panel: IP65		
Environmental				
Operating Temperature		-20 ~ +70°C		
Storage Temperature		-30 ~ +80°C		
Ambient Relative Humidity		10 ~ 90% RH (non-condensing)		
Power				
Input Range		+10 ~ +30 VDC		
Isolation		1 kV		
Capacity		12.5 W		
Consumption		7.2 W		8.5 W

ISaGRAF Specifications

Protocols (some protocols need optional devices)		
NET ID		1 ~ 255, user-assigned by software
Modbus TCP/IP Master		Link to max. 100 devices that support Standard Modbus TCP/IP Slave protocol (FAQ-113)
Modbus RTU/ASCII Master		Max. 10 ports: COM2, 3 and COM5 ~ 14. (To connect to other Modbus Slave devices). Support Multi-port. (*)
Modbus RTU Slave		Max. 5 Ports: one of COM2/3, COM5 ~ 8. (For connecting ISaGRAF, PC/ HMI/ OPC Server & HMI panels.) (*)
Modbus TCP/IP Slave		Yes, LAN1 and optional 2nd Ethernet Port in I-8135W support total up to 32 connections (for connecting ISaGRAF & 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 or 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.
M-7000 Series Modbus I/O		Max. 10 RS-485 ports: COM2, 3, 5 ~ 14. Each port can connect up to 32 M-7000 Modules. (with optional I-7510 repeater connected can connect up to more than 32 M-7000 Modules) (*)
Modbus TCP/IP I/O		Supports ICP DAS Ethernet I/O : I-8KE4-MTCP and I-8KE8-MTCP (FAQ-042). If LAN1 is broken, it will switch to the 2nd Ethernet port (in optional I-8135W card) automatically to continuously work. (This need LAN1 & the 2nd Ethernet's IP are set in the same IP domain)
FRnet I/O		Support max 3 pcs. I-8172W boards in slot 0 ~ 2 to connect to FRnet I/O modules, like FR-2053, FR-2057, FR-32R, FR-32P (FAQ-048). Each I-8172W board can connect up to 256 DI plus 256 DO channels.
Send Email		Support functions to send email with one attached file via Ethernet port.
Ebus		To exchange data between ISaGRAF Ethernet PAC via Ethernet port. (LAN1 Port only)
SMS: Short Message Service		COM3 or COM5 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: GTM-201-RS232 (850/900/1800/1900 GSM/GPRS External Modem)
User-Defined Protocol		User can write his own protocol applied at COM2, 3 and COM5 ~ COM14 by Serial communication function blocks (*).
MMICON/LCD		COM3 or COM5 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, fl oat, & input a char, string, integer & fl oat.
UDP Server & UDP Client : Exchange Message & Auto-Report		LAN1 or the 2nd Ethernet (in optional I-8135W card) support UDP Server and UDP Client protocol to send/receive message to/from PC/HMI or other devices. Ex: to automatically report data to InduSoft's RXTX driver.
TCP Client : Exchange Message & Auto-Report		LAN1 or the 2nd Ethernet (in optional I-8135W card) ca 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.
GPRS/SMS		Support the I-8212W (2G/3G) card to receive/send a short message or to dial up to link the Internet by GPRS connection to send an email or communicate with remote stations by using "Ftp Client" (FAQ-151) and "TCP Client" / "UDP Server" / "UDP Client" (FAQ-143).
SQL Client		Support SQL Client function to write data to (or read data from) Microsoft SQL Server (2000 SP3, 2005, 2008).
Hot-Swap and Redundant System		Must enable the 2nd Ethernet port in the optional I-8135W card. This redundant system has setup two "Active IP" address point to the active VP-2xW7/2xW6 's LAN1 and 2nd Ethernet 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 VP-2xW7/2xW6 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. (FAQ-093)
CAN/CANopen		COM3 or COM5 ~ COM14 can connect one I-7530 (Converter: RS-232 to CAN) to support CAN/CANopen devices and sensors. One PAC supports max.10 RS-232 ports to connect max.10 I-7530. (*)
CANopen Master		Support the I-8123W CANopen Master card to connect other CANopen slave devices. (FAQ-145)
HART Solutions		Support I-87H17W modules in slot 0 to 2 to communicate with other HART devices.
FTP Client		Support FTP client to upload files in the PAC to a remote FTP server on PC. (FAQ-151)
Soft-GRAF HMI		Support the Soft-GRAF HMI . User can use the Soft-GRAF Studio on the PC to design the HMI screen and then download it to the PAC to display the HMI on the PAC. (FAQ-146)
Optional I/O Functions (Refer to 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: 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, 8041W, 8041AW, 8042W, 8050W, 8054W, 8055W, 8056W, 8057W, 8060W, 8063W, 8064W, 8068W, 8069W. (Relay Output boards cannot generate fast square wave)
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, 8046W, 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 I-7K/I-87K DI modules support counters. 100 Hz max. Value: 0 ~ 65535
	High Speed Counter	I-87082W: 100 kHz max. 32 bit; I-8084W: 250 kHz max. 32 bit
	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	one I-8091W (2-axis) or two I-8091W (4-axis) can do motion control. only one I-8091W can do X-Y dependent motion.
Port	Second Ethernet	VP-2xW7 / VP-2xW6 can add one optional I-8135W card in its slot 0 ~ 2 to expand the second Ethernet port.

*** Note: COM5 ~ COM14 are resided at the expansion boards if they are plugged on slot0~2 of VP-2xW7.**
*** ISaGRAF FAQ: http://www.icpdas.com/faq/isagraf.htm**