



Features

- 80186, 80 MHz CPU
- Embedded ISaGRAF Ver.3 SoftLogic (IEC 61131-3)
- 3 I/O Slots
- IP65 Compliant Front Panel
- STN LCD with English and Chinese Fonts
- Rubber Keypad with 24 Keys
- Operating Temperature: -15 ~ +55°C

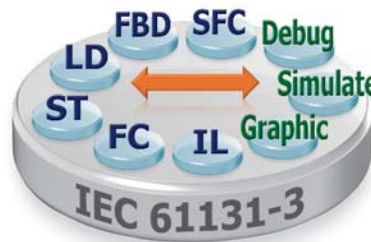
Introduction

The **ISaGRAF MiniOS7 ViewPAC Series (VP-2117)** is the ISaGRAF PAC (Programmable Automation Controller) with graphic display and keypad. Each is equipped with an 80186 CPU (16-bit and 80 MHz) running a MiniOS7 operating system, a STN LCD, a rubber keypad, 3 or no I/O slots, and a variety of input/output ports (Ethernet, RS-232/485, etc.). Its operating system, MiniOS7, can boot up in a very short time (0.4 ~ 0.8 seconds). It has a built-in hardware diagnostic function, and supports the full range of functions required to access all high profile I-8K and I-87K series I/O modules, such as DI, DO, DI/DO, AI, AO, Counter/Frequency, motion control modules, etc. Users can also choose RS-485 Remote I/O modules (I-7000 series) or expansion units (RU-87Pn or I-87Kn) plugged with high profile I-87K serial I/O modules. Compared with traditional HMI + PLC solutions, ViewPAC reduces overall system cost, space and gives you all the best features of HMIs and PLCs.

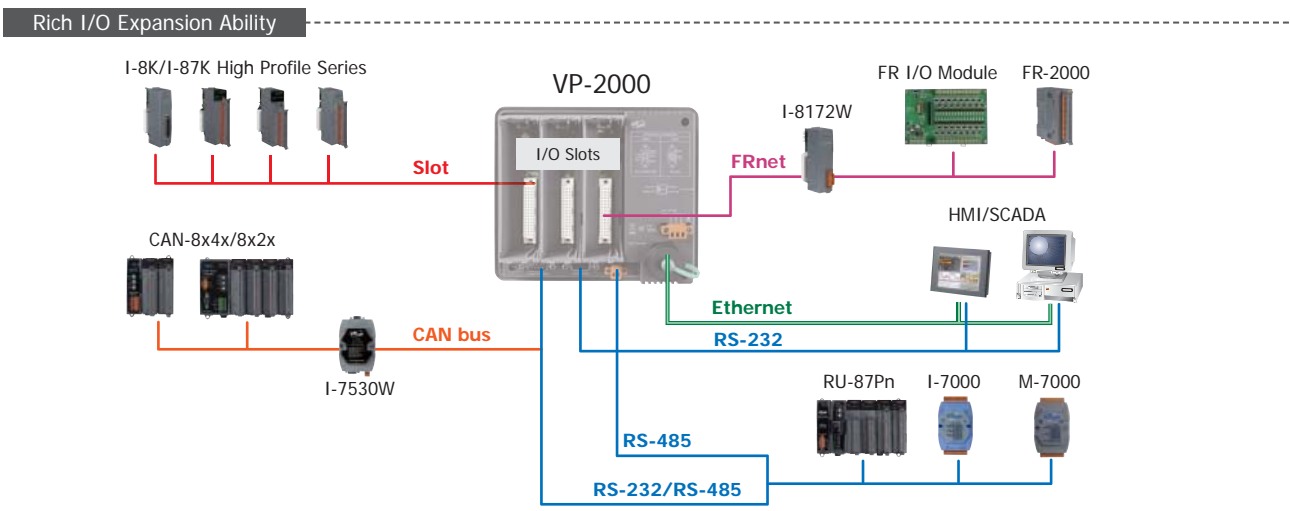
ISaGRAF Features

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 Debug/Control/Monitor, Offline Simulation
- Simple Graphic HMI

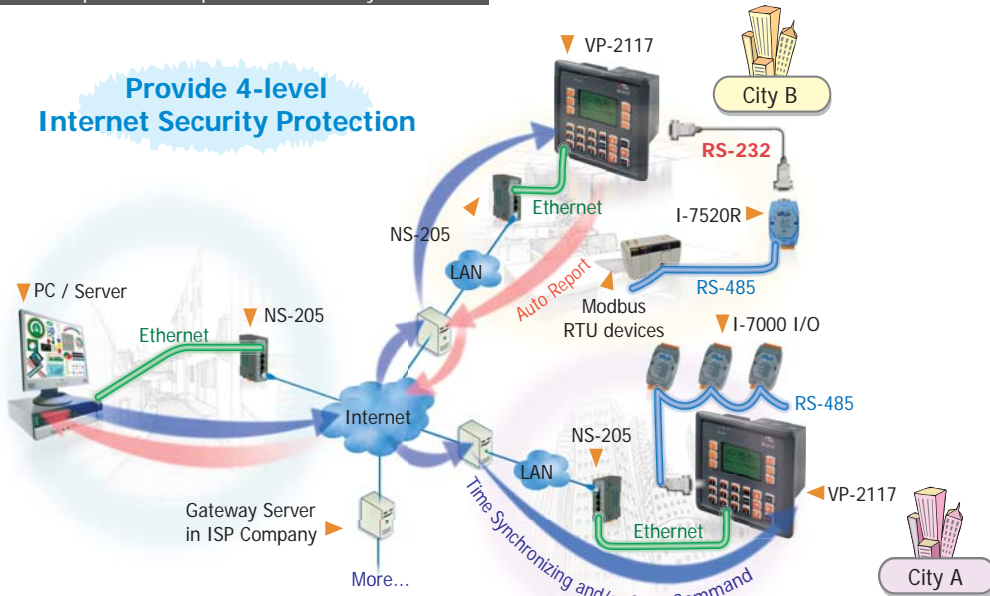


Applications

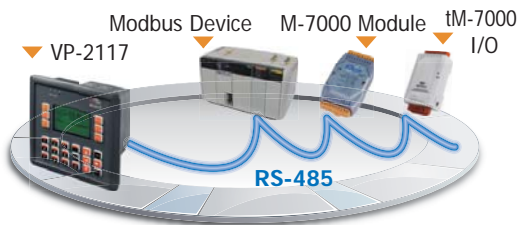


Cost-effective Auto-ReportData Acquisition/Control System

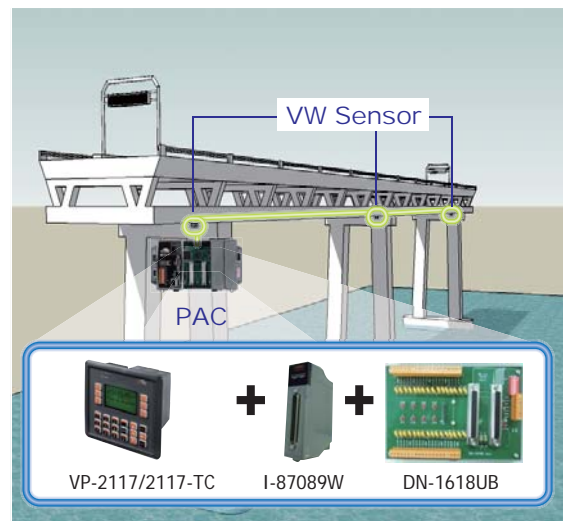
Provide 4-level Internet Security Protection



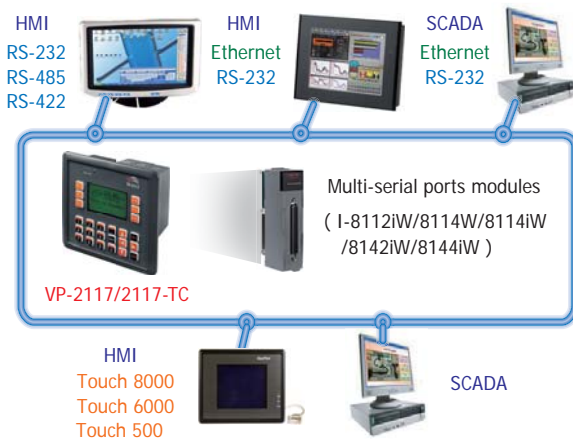
Modbus RTU/ASCII Master Ports



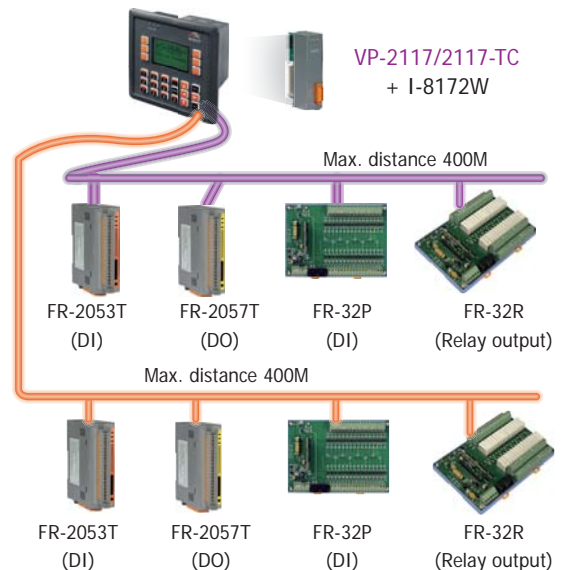
Stress Monitoring of Constructions



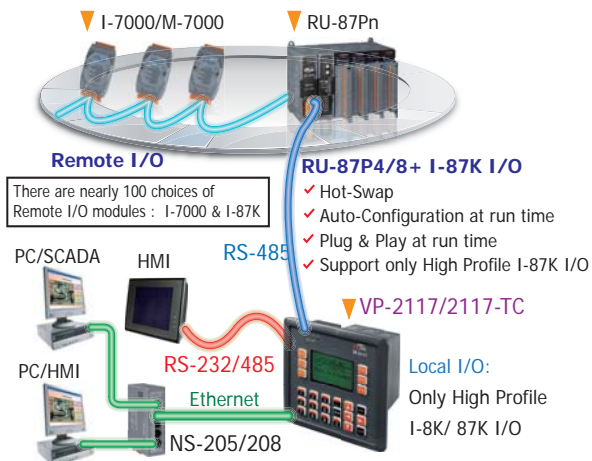
Modbus RTU/TCP Slave Ports



FRnet I/O Application



Local/Remote I/O Expansion & Multi-HMI



ViewPAC Specifications

Models		VP-2117
System Software		
OS	MiniOS7 (DOS-like embedded operating system)	
Development Software		
ISaGRAF Software	ISaGRAF Version 3	IEC 61131-3 standard
	Languages	LD, ST, FBD, SFC, IL & FC
	Max. Code Size	64 KB
	Scan Time	2 ~ 25 ms for normal program 10 ~ 125 ms (or more) for complex or large program
CPU Module		
CPU	80186, 80 MHz	
SRAM	768 KB	
Flash	512 KB	
Flash Disk	64 MB NAND Flash	
Dual Battery Backup SRAM	512 KB; data valid up to 5 years (for retain variables)	
EEPROM	16 KB	
NVRAM	31 bytes (battery backup, data valid up to 5 years)	
RTC (Real Time Clock)	Provide second, minute, hour, date, day of week, month, year	
64-bit Hardware Serial Number	Yes, for Software Copy Protection	
Watchdog Timers	Yes (0.8 second)	
Communication Ports		
Ethernet	RJ-45 x 1, 10/100 Base-TX (Auto-negotiating, LED indicators). Recommend to use NS-205/NS-208 Industrial Ethernet Switch.	
COM 0	Internal communication with the I-87K High Profile modules in slot 0 ~ 2	
COM 1	RS-232 (RxD, TxD and GND) Program download port; Non-isolated	
COM 2	RS-485 (Data+, Data-) with internal self-tuner ASIC; 2500 VDC isolated	
COM 3	RS-232/RS-485 (RxD, TxD, CTS, RTS and GND for RS-232, Data+ and Data- for RS-485); Non-isolated	
MMI (Man Machine Interface)		
LCD	STN, 128 x 64 Dot Matrix LCD	
Display Mode	Text + Graphics	
Text Font	English + Simplified Chinese/Traditional Chinese	
Rubber Keypad	24 keys	
Buzzer	Yes	
LED Indicators	3 Dual-Color LEDs (PWR, RUN, LAN1, L1,L2, L3; L1~L3 for User Programmable)	
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	
Installation	Panel Mounting	
Ingress Protection	Front panel: IP65	
Environmental		
Operating Temperature	-15 ~ +55°C	
Storage Temperature	-30 ~ +80°C	
Ambient Relative Humidity	10 ~ 90% RH (non-condensing)	
Power		
Input Range	+10 ~ +30 VDC	
Isolation	1 kV	
Capacity	15 W	
Consumption	6 W	

ISaGRAF Specifications

Protocols (Note that certain protocols require optional devices)		
NET ID	1 ~ 255, user-assigned by software	
Modbus RTU/ASCII Master	A max. of 2 ports: COM1~3 and COM5. (To connect to other Modbus Slave devices.) (*) A max. of Modbus_XXX Function Block amount for 2 ports: 128.	
Modbus RTU Slave	A max. of 2 ports: COM1 and one of COM2~3. (For connecting ISaGRAF, PC/HMI/OPC Server and HMI panels.)	
Modbus TCP/IP Slave	Ethernet port supports Modbus TCP/IP Slave Protocol for connecting ISaGRAF & PC/HMI up to 6 connections.	
User-defined Protocol	Custom protocols can be applied at COM1~3 and COM5~16 using Serial communication function blocks. (*)	
Remote I/O	One of COM2 or COM3 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 64 I-7000/87K remote I/O modules can connect to one PAC. (*)	
Fbus	Built-in COM3 Port to exchange data between ICP DAS's ISaGRAF PACs.	
Ebus	Used to exchange data between ICP DAS ISaGRAF Ethernet PACs via the Ethernet port.	
Send Email	Provide functions to send email to a max. of 10 receivers with a single attached file via the Ethernet port through internet. The max. of file size is about 488 KB.	
SMS: Short Message Service	One of COM3 or COM5 can link to a GSM Modem to support SMS. The user can request data/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) or visit to the web site for recommended GSM/GPRS modem.	
CAN/CANopen	A max. of 3 ports: COM1, COM3 or COM5~12 can connect to one I-7530 (converter: RS-232 to CAN) to support CAN/CANopen devices and sensors. One PAC supports a max. of 3 RS-232 ports to connect a max. of 3 I-7530. (*) (FAQ-086)	
FRnet I/O	Enable a max. of 3 pcs. I-8172W boards to be used to connect to FRnet I/O modules, such as FR-2053, FR-2057, FR-32R, FR-32P. (Max. 768-ch. DI + 768-ch. DO)	
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-8088W: 8-ch PWM outputs, software support 1 Hz ~ 100 kHz (non-continuous), duty: 0.1 ~ 99.9%
	DO Module as PWM	8-ch. max. 500 Hz max. For Off=1 & On=1 ms. Output square wave: Off: 1 ~ 32766 ms, On: 1 ~ 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)
Counters, Encoder, Frequency	Parallel DI Counter	8 ch. max. for 1 controller. Counter Val: 32-bit.; 500 Hz max. Min. ON & OFF width must >1ms 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 remote 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. 4M Hz for pulse/direction and cw/ccw input mode. (FAQ-112) I-8084W: 250 kHz max., 4-ch encoder, can be pulse/direction, or Up/Down or A/B phase (Quad. mode); Not support Encoder Z-index. (FAQ-100)
Motion	Motion Control	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;
		Can be integrated with one I-8091W (2-axis) or two I-8091W (4-axis). Ethernet communication is also available when doing motion control.
* Note: The COM5 ~ COM16 are located in the expansion boards if they are installed in slots 0~2 of VP-2117.		
* ISaGRAF FAQ: www.icpdas.com > Support > FAQ > ISaGRAF Soft-Logic PAC		
* ICP DAS recommends using NS-205/208 or RS-405/408 (Ring Switch) Industrial Ethernet Switches.		

ISaGRAF MiniOS7 ViewPAC

Ordering Information

VP-2117 CR	ISaGRAF based ViewPAC with 3 I/O Slots (English + Simplified Chinese Font) (RoHS)
VP-2117-TC CR	ISaGRAF based ViewPAC with 3 I/O Slots (English + Traditional Chinese Font) (RoHS)

Software and Accessories

ISaGRAF Development Software	
ISaGRAF-256	ISaGRAF Workbench Software Ver.3 (256 I/O Tags) with One USB Dongle
ISaGRAF-32	ISaGRAF Workbench Software Ver.3 (32 I/O Tags)
Note: No upgrade service from ISaGRAF-32 to ISaGRAF-256 is available. (ISaGRAF-32 can be used to control more than 32 I/O tags. Please refer to Ch. 3.4 of the ISaGRAF User Manual.)	
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
MDR-60-24 CR	24 VDC/2.5 A, 60 W Power Supply with DIN-Rail Mounting (RoHS)