



VP-2117

## Features

- 80186, 80 MHz CPU
- ISaGRAF Ver.3 SoftLogic Inside (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

ViewPAC series is the ISaGRAF PAC with graphic display and keypad. It 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 various connectivity including Ethernet and 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

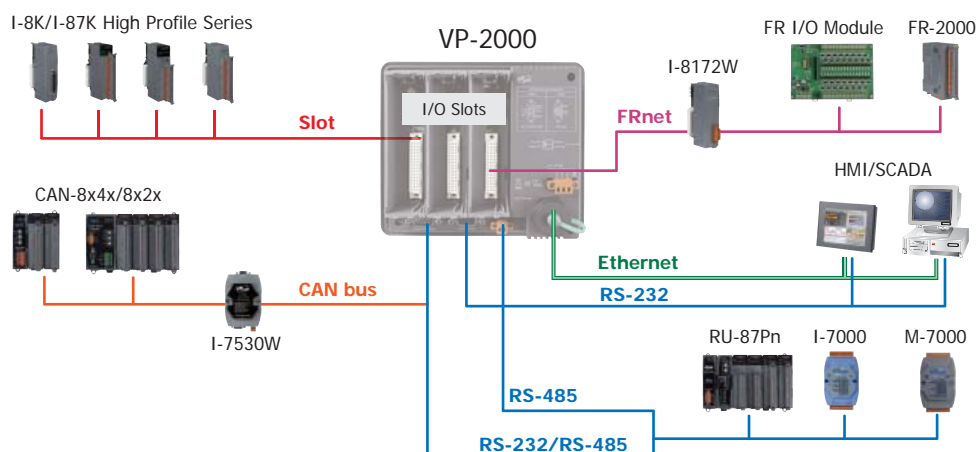
The ISaGRAF workbench Ver. 3.x features:

- 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



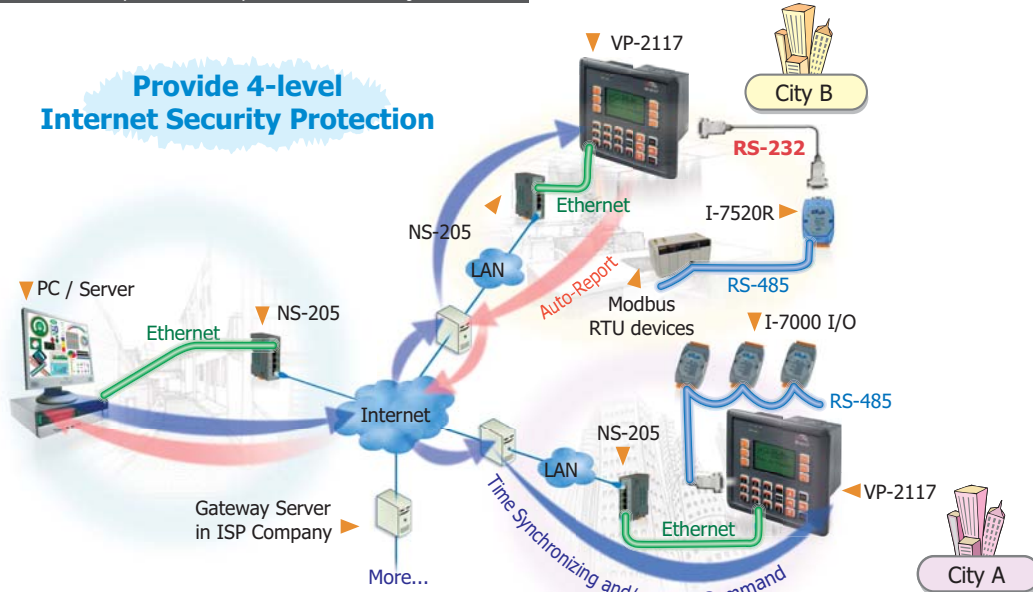
## Applications

### Rich I/O Expansion Ability

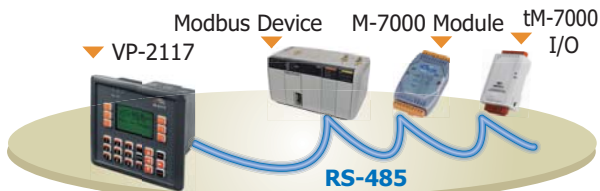


## Cost-effective Auto-ReportData Acquisition/Control System

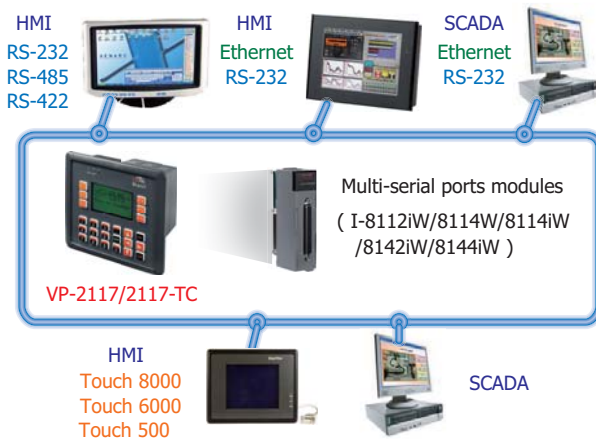
## Provide 4-level Internet Security Protection



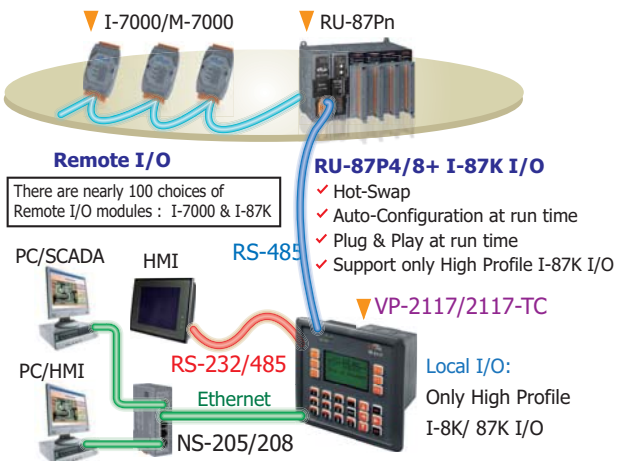
## Modbus RTU/ASCII Master Ports



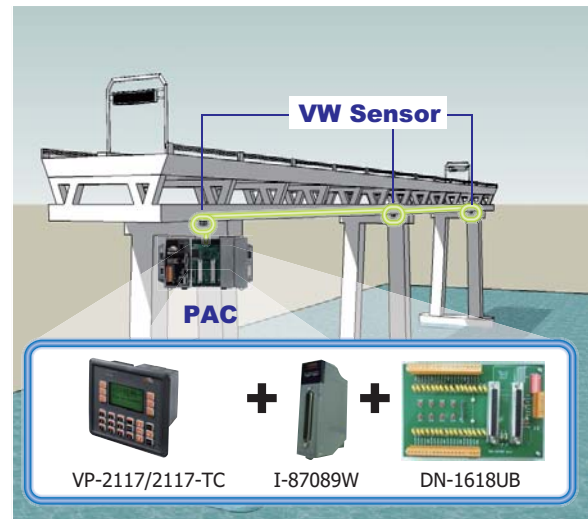
## Modbus RTU/TCP Slave Ports



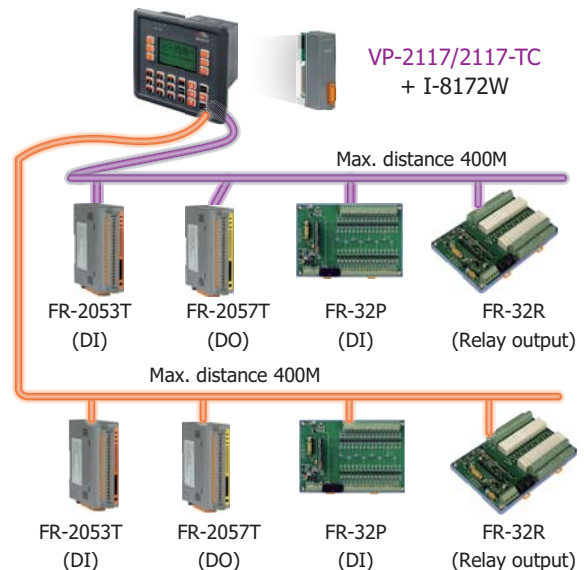
## Local/Remote I/O Expansion &amp; Multi-HMI



## Stress Monitoring of Constructions



## FRnet I/O Application



## ViewPAC Specifications

Models		VP-2117
<b>System Software</b>		
OS		MiniOS7 (DOS-like embedded operating system)
<b>Development Software</b>		
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
<b>CPU Module</b>		
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)
<b>Communication Ports</b>		
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
<b>MMI (Man Machine Interface)</b>		
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)
<b>I/O Expansion Slots</b>		
Slot Number		3 Note: For High Profile I-8K and I-87K Modules only
<b>Mechanical</b>		
Dimensions (W x L x H)		182 mm x 158 mm x 125 mm
Installation		Panel Mounting
Ingress Protection		Front panel: IP65
<b>Environmental</b>		
Operating Temperature		-15 ~ +55°C
Storage Temperature		-30 ~ +80°C
Ambient Relative Humidity		10 ~ 90% RH (non-condensing)
<b>Power</b>		
Input Range		+10 ~ +30 VDC
Isolation		1 kV
Capacity		15 W
Consumption		6 W

## ISaGRAF Specifications

Protocols (some protocols need optional devices)		
NET ID		1 ~ 255, user-assigned by software
Modbus RTU/ASCII Master		Max. 2 COM Ports: COM1 ~ COM3 and COM5. (To connect to other Modbus Slave devices.) (*) Max. Modbus_XXX Function Block amount for 2 ports: 128.
Modbus RTU Slave		Max. 2 COM Ports, COM1 and one of COM2 or COM3. (For connecting ISaGRAF, PC/HMI/OPC Server & MMI panels.)
Modbus TCP/IP Slave		Max. 6 connections. For connecting ISaGRAF & PC/HMI.
User-Defined Protocol		COM1 ~ COM3, COM5 ~ COM16 by serial communication function blocks (*)
Remote I/O		One of COM2 or 3 supports I-7000 I/O modules, and I-87Kn base or RU-87P1/2/4/8 + I-87K High Profile I/O boards as Remote I/O. Max. 64 Remote I/O module for one PAC.
Fbus		Built-in COM3 Port to exchange data between ICP DAS's ISaGRAF PACs.
Ebus		To exchange data between ICP DAS's ISaGRAF Ethernet PACs via Ethernet port.
SMS: Short Message Service		One of 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/GPRS 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		Max. 3 COM Ports: COM1, 3 or COM5 ~ COM12 (*) can connect one I-7530 (RS-232 to CAN converter) to support CAN/CANopen devices and sensors. One VP-2117 supports max. 3 RS-232 Ports to connect max. 3 I-7530. (FAQ-086)
FRnet I/O		Support Max. 3 I-8172W FRnet Master cards to connect FRnet I/O modules (Max. 768-ch. DI + 768-ch. DO)
Send Email		Actively or passively sending Email via Ethernet port through internet. Max. 10 receivers for each sending and can send Email with an attached file. (Max. file size is about 488 KB)
Optional I/O Functions (Refer to 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)
	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 integrate with one I-8091W (2-axis) or two I-8091W (4-axis) to do motion control. Ethernet communication is also available when doing motion control.
* Note: COM5 ~ COM16 are resided at the expansion boards if they are plugged on slot0~2 of VP-2117. * ISaGRAF FAQ: <a href="http://www.icpdas.com/faq/isagraf.htm">http://www.icpdas.com/faq/isagraf.htm</a> * Recommend to use NS-205/NS-208 Industrial Ethernet Switch.		

## 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)

## 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)
ISaGRAF-32-C	ISaGRAF Workbench Software Ver.3 (32 I/O Tags) with One Application Book (Chinese version)
<b>Note:</b> 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)	
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)