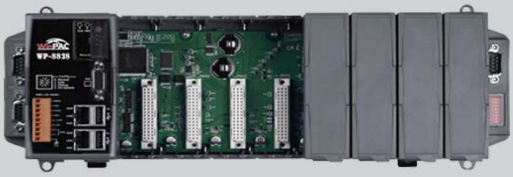
WP-8128-CE7 WP-8428-CE7



WP-8828-CE7

Features

- Cortex-A8, 1GHz CPU
- 512 MB DDR3 and 256 MB Flash
- Windows CE 7.0 Professional
- Embedded Win-GRAF SoftLogic (IEC 61131-3)
- Hard Real-Time Capability
- VGA Port Output
- Modbus RTU/TCP (Master, Slave)
- Support eLogger HMI
- Redundant Power Inputs
- Operating Temperature: -25 ~ +75 °C

Introduction

The **Win-GRAF WinPAC-8000-CE7 Series (WP-8128-CE7/8428-CE7/8828-CE7)** is the new generation Windows CE 7.0 based PAC (Programmable Automation Controller) of ICP DAS. Each WP-8000-CE7 is equipped with a Cortex-A8 (1.0 GHz) CPU running a Windows CE 7.0 operating system, a variant of input/output ports (VGA, USB, Ethernet, RS-232/485), and 1/4/8 expansion I/O slots that can be used to integrate high performance I-8K (parallel-type) and I-87K (serial-type) series I/O modules.

The benefits of running Windows CE 7.0 on a WinPAC device include hard real-time capability, achievable deterministic control and allowing PAC can have a PC-like window displays and operating environment. The WP-8xx8-CE7 series PACs are capable of running Win-GRAF (IEC 61131-3 Standard) software to develop logic control applications, and also supporting M.S. VS 2008 software (VB .NET, C#) to develop HMI and data management applications that can exchange data with Win-GRAF applications. So the application's design is more convenient and more practical.

Windows Embedded Compact 7

Windows® Embedded Compact 7

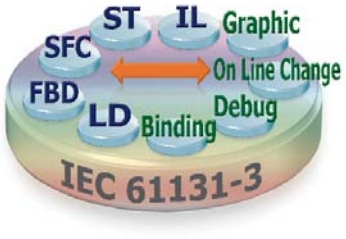
CE7 is a compact and hard real-time OS used to quickly create time critical and high performance applications. Using CE7 gives an ability to run PC-based control software such as Visual Basic .NET, Virtual C#, SCADA software, SoftPLC, etc.

★ FTP Server
★ Web Server
★ Telnet server
★ Visual Studio.NET

Win-GRAF

Win-GRAF is a powerful, PLC-like, softlogic development software. It is installed on PC with windows 7 or 8. It supports the international PLC language standard - IEC 61131-3 - Ladder Diagram (LD), Function Block Diagram (FBD), Sequential Function Chart (SFC), Structured Text (ST), Instruction Set (IL), suitable to develop applications for the full range of Win-GRAF PACs from ICP DAS.

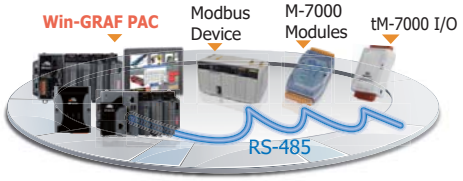
- IEC 61131-3 Standard Open PLC Syntax (LD, FBD, SFC, ST, IL)
- Using ST Syntax in the FBD or LD Program
- Event Triggered Data Binding (Exchange Data between PACs)
- Online Debugging/Control/Monitoring, Offline Simulation
- On Line Change
- Various Protocols:
  - Modbus TCP/UDP, Modbus RTU/ASCII Master
  - Modbus TCP, RTU Slave
  - DCON ...
- Plenty of Functions, Function Blocks, I/O Boards
- Redundancy (For XP-8xx8-CE6 PAC only)



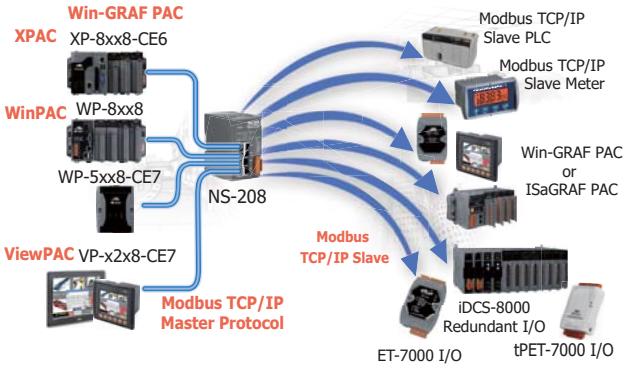
Applications

Modbus Master Ports

Modbus RTU/ASCII Master



Modbus TCP/UDP Master

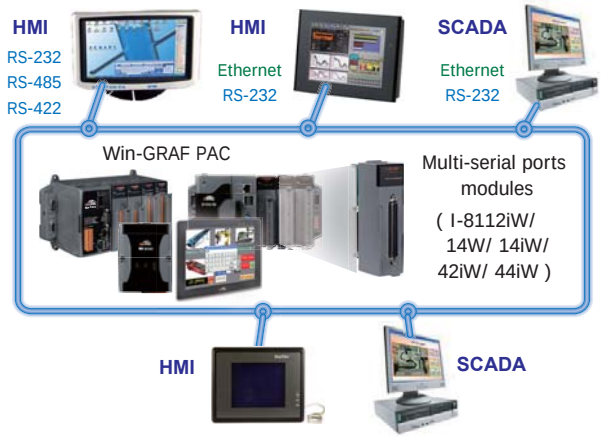


Win-GRAF XPAC support max. 200 devices.
Win-GRAF WinPAC & ViewPAC support max. 32 devices.

On Line Change

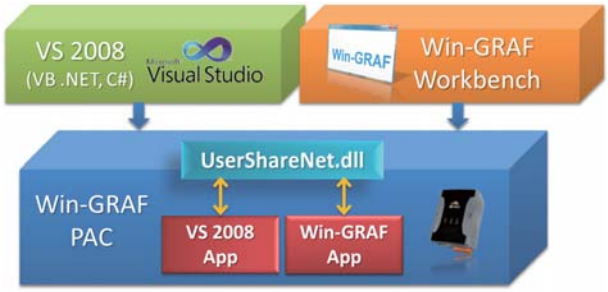
- Replace the current running project to a new modified one without stopping the project.

Modbus RTU/TCP Slave Ports

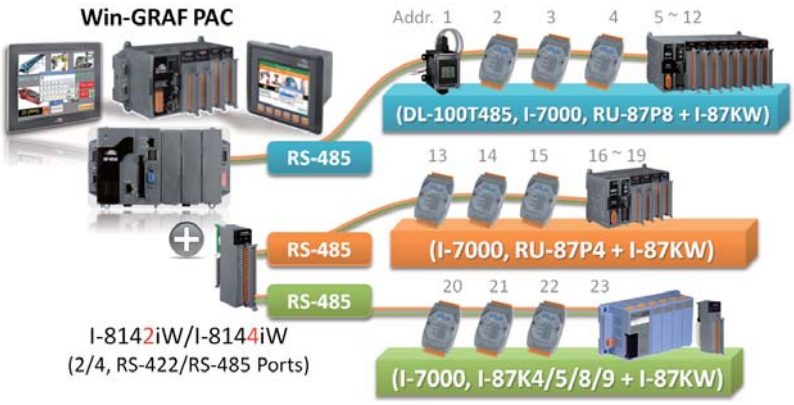


Support VS 2008 Development

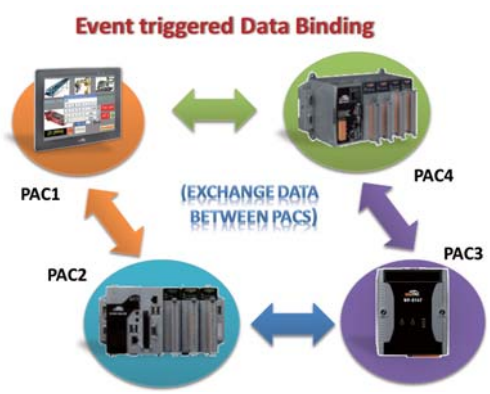
- The Win-GRAF PACs support to use VS 2008 (VB.net, C#) to develop user own HMI and data management programs, and can exchange variables with the Win-GRAF control programs.



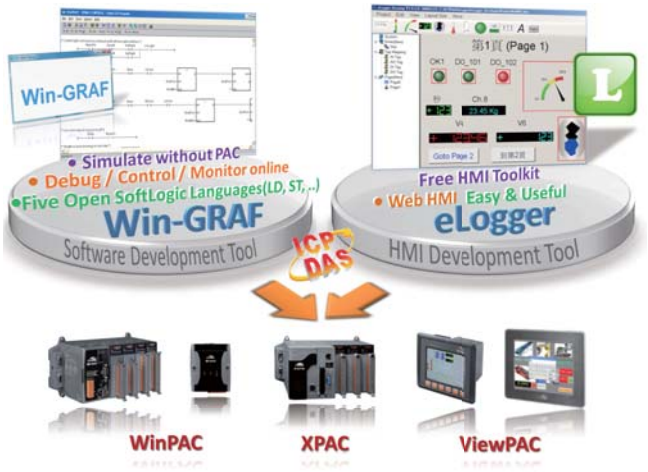
DCON Remote I/O



Data Binding



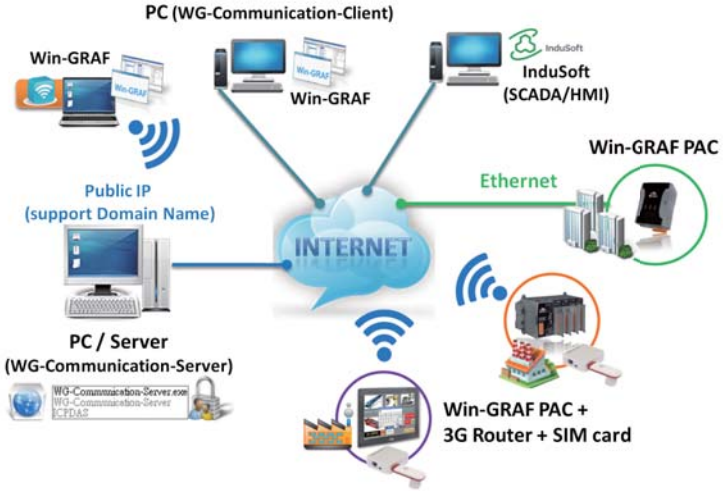
eLogger HMI



Schedule Control

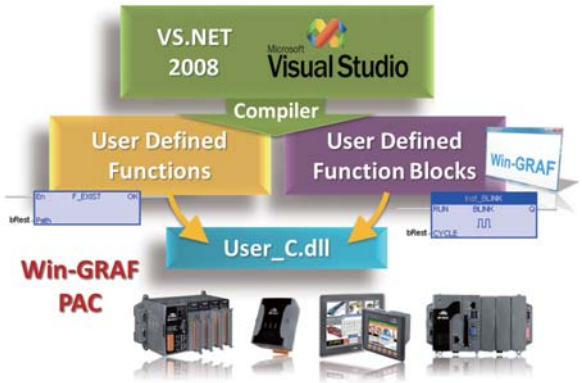
Intelligent Win-GRAF 3G Solution

- Only the WG-Communication Server (behavior like a Cloud Server) needs a public IP (Support Domain Name). Other PACs and PCs that connect to this Server no need a public IP.
- The user can monitor the remote PAC by using a 3G wireless network or an intranet.
- The user can use the Win-GRAF Workbench to connect to a remote PAC to debug/update the Win-GRAF program or update the Win-GRAF PAC Driver.
- The PAC can actively send a Log File to a PC (WG-Communication-Server).



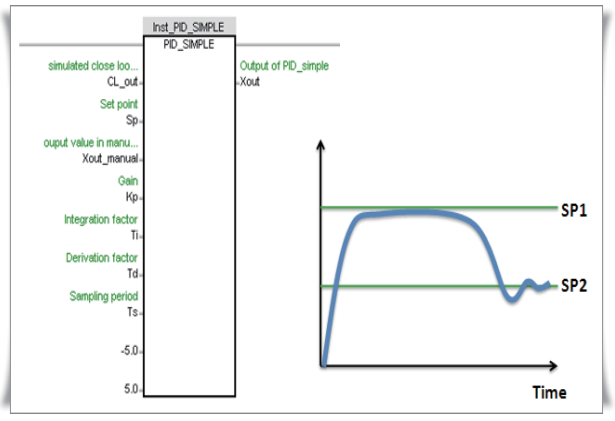
Create Your Own Functions and Function Blocks

- For some reason (like business protection, integration with your own product protocol, and etc.), you can develop your own functions and function blocks by VS 2008. Then, you can use these functions and function blocks in the Win-GRAF project.



PID Control

- Can Control more than 200 PID in one PAC.



ViewPAC Specifications

Models		WP-8128-CE7	WP-8428-CE7	WP-8828-CE7
System Software				
OS		Windows CE 7.0		
.Net Compact Framework		3.5		
Embedded Service		FTP server, Web server (supports VB script, JAVA script), Embedded SQL server		
Multilanguage Support		English, German, French, Spanish, Russian, Italian, Korean, Simplified Chinese, Traditional Chinese		
Development Software				
Win-GRAF Software	Win-GRAF	IEC 61131-3 standard.		
	Languages	LD, ST, FBD, SFC & IL; Support eLogger HMI: WP-8xx8, WP-5xx8-CE7, WP-8xx8-CE7, WP-9xx8-CE7, XP-8xx8-CE6 and VP-x2x8-CE7 PAC		
	Max. Code Size	2 MB		
	Scan Time	3 ~ 15 ms for normal program; 15 ~ 50 ms for complex or large program		
Non-Win-GRAF		Options: VS.NET 2008 (VB.NET, C#.NET, C)		
CPU Module				
CPU		Cortex-A8 (1.0 GHz)		
DDR3 SDRAM		512 MB		
MRAM		128 KB		
Flash		256 MB		
EEPROM		16 KB		
Memory Expansion		microSD socket with one microSD card (support up to 32 GB)		
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		
Programmable LED Indicator		1		
Rotary Switch		Yes (0 ~ 9)		
DIP Switch		-	Yes (8 bits)	Yes (8 bits)
VGA & Communication Ports				
VGA		800 x 600, 1024 x 768		
Ethernet		RJ-45 x 2, 10/100/1000M Base-TX		
USB 2.0		2		
COM0		Internal communication with the high profile I-87K series modules in slots		
COM1		RS-232 (RxD, TxD and GND); Non-isolation		
COM2		RS-485 (Data+, Data-) with internal self-tuner ASIC; 3000 VDC isolated		
COM 3		-	Yes	Yes
		RS-232/RS-485 (RxD, TxD, CTS, RTS and GND for RS-232; Data+ and Data- for RS-485); non-isolated		
COM 4		-	Yes	Yes
		RS-232 (RxD, TxD, CTS, RTS, DSR, DTR, CD, RI and GND); non-isolated		
I/O Expansion Slots				
Slot Number		1	4	8
		Note: For High Profile I-8K and 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 VDC		
Isolation		1 kV		
Redundant Power Inputs		Yes, with one power relay (1 A @ 24 VDC) for alarm		
Capacity		1.0A, 5V supply to CPU and backplane, 0.6A, 5V supply to I/O expansion slots, total 8 W	1.1A, 5V supply to CPU and backplane, 4.9A, 5V supply to I/O expansion slots, total 30 W	1.2A, 5V supply to CPU and backplane, 4.8A, 5V supply to I/O expansion slots, total 30 W
Consumption		7.3 W (0.3 A @ 24 VDC)	9.1 W (0.38 A @ 24 VDC)	9.6 W (0.4 A @ 24 VDC)

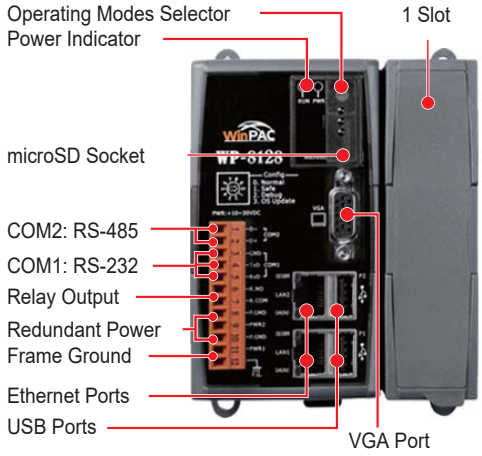
Win-GRAF Specifications

Protocols (Note that certain protocols require optional devices)	
NET ID	1~255, for Modbus TCP/RTU Slave, user-assigned
Modbus TCP Master	A max. of 32 IP links to access/control the devices supporting Standard Modbus TCP Slave protocol.
Modbus RTU/ASCII Master	A max. of 36 ports: COM1 ~ 37 to connect other Modbus Slave devices (Like M-7000). Recommend connecting no more than 32 devices in each port for better scan rate. (*)
Modbus RTU Slave	A max. of 16 ports: COM1 ~ 37 for connecting SCADA/HMI/OPC Server. (*)
Modbus TCP Slave	Two Ethernet ports (LAN1 & LAN2) support up to 32 connections. If the PAC uses 1 connection to connect each PC/HMI, it can connect up to 32 PCs/HMIs; If the PAC uses 2 connections to connect each PC/HMI, it can connect up to 16 PCs/HMIs; If one of the Ethernet port malfunctions, the other one can still be used to connect the PC/HMI.
User-defined Protocol	Custom protocols can be applied at COM1~37 by using Serial communication functions or function blocks. (*)
DCON Remote I/O	A max. of 16 RS-485 ports: COM1 ~ 37. Each port can connect max. 50 nos I-7000 series modules or 50 nos I-87xxxW I/O modules in expansion units (I-87K4, I-87K8, I-87K9, RU-87P8, RU-87P4). Recommend connecting no more than 32 modules in each port for better scan rate.
Local I/O Modules	Supports only high profile I/O modules. Slot 0~7 supports I-8xxxW parallel I/O modules and I-87xxxW serial I/O modules. (Refer Optional I/O List)
App Protection	Using the unique 64-bit (8 bytes) PAC serial number to generate a protection password by your own algorithm to protect your Win-GRAF application. Then, if someone intend to copy your application in the PAC to another new PAC with the same PAC model, this application will not work properly in that new PAC.
Data Binding	Exchange data between ICP DAS Win-GRAF PAC via Ethernet ports (LAN1 and LAN2). The data transmission is event triggered. It is much efficient than polling way. Beside, user can setup the Redundant Binding in two ethernet ports by Software, then if one Ethernet port fail, it can switch to use the other port.
On Line Change	For application field that not allowed to stop the Win-GRAF program and wish to run a new program modified a little from the original program.
Modbus RTU I/O	When software enables Modbus RTU Master function, the PAC can connect ICP DAS M-7000 and tM series and LC series I/O modules which support Modbus RTU protocol.
Modbus TCP I/O	When software enable Modbus TCP Master function, the PAC can connect ET-7000, I-8KE4/8-MTCP and tPET/tET series I/O modules of ICP DAS which support Modbus TCP protocol.
HART Master	Support I-87H17W modules in slot 0 to 7 to communicate with other HART devices.
Schedule Control	Supports the "Schedule-Control Utility" (free) to implement schedule control. Each PAC can control max. 10 Targets (devices) with different schedule settings in each day / holiday / special day / season / year .
Retain Variables	Built-in the fast retain memory that can retain up to 12,000 Win-GRAF variables.
File Access & Data Log	The Win-GRAF supports file operation functions to read/write files in the PAC's micro_SD or flash memory to do data log or file access.
eLogger HMI	Support to run HMI program (developed by the eLogger) together with the Win-GRAF logic-control program in the same PAC.
Optional I/O List (Refer to http://www.icpdas.com/root/product/solutions/remote_io/rs-485/i-8k_i-87k/i-8k_i-87k_selection.html#a)	
Digital Input (DI)	I-8040W, I-8040PW, I-8046W, I-8051W, I-8052W, I-8053W, I-8053PW, I-87040W, I-87040PW, I-87046W, I-87051W, I-87052W, I-87053W, I-87053PW, I-87053W-A2, I-87053W-A5, I-87053W-E5
Digital Input/Output (DIO)	I-8042W, I-8050W, I-8054W, I-8055W, I-87042W, I-87054W, I-87055W
Digital Output (DO)	I-8037W, I-8041W, I-8041AW, I-8056W, I-8057W, I-87037W, I-87041W, I-87057W, I-87057PW
Relay Output	I-8060W, I-8063W, I-8064W, I-8068W, I-8069W, I-87061W, I-87061PW, I-87063W, I-87064W, I-87065W, I-87066W, I-87068W, I-87068W-2A, I-87069W, I-87069PW
AC Input	I-8058W, I-87053W-AC1, I-87058W, I-87059W
Analog Input (AI)	I-8017DW, I-8017HW, I-8017HCW, I-87017W, I-87017RW, I-87017RCW, I-87017DW, I-87017W-A5, I-87017ZW, I-87018W, I-87018RW, I-87018PW, I-87018ZW, I-87019PW, I-87019RW, I-87019ZW
Analog Output (AO)	I-8024W, I-87024CW, I-87024UW, I-87024DW, I-87024RW, I-87024W, I-87028CW, I-87028UW, I-87028VW, I-87028VW-20V
Multifunction (DIO, AIO)	I-87026W
Temperature Input	T/C: I-87018W, I-87018RW, I-87018PW, I-87018ZW, I-87019PW, I-87019RW, I-87019ZW Thermister: I-87005W; RTD: I-87013W, I-87015W, I-87015PW
Strain Gauge	I-87016W
Counter/Frequency Input	I-8084W, I-87082W, I-87084W
Encoder Input	I-8093W
PWM Output	I-8088W
HART	I-87H17W
GPS	GPS-721
Communication Module	I-8112iW, I-8114W, I-8114iW, I-8142iW, I-8144iW
Temperature & Humidity Input	DL-100T485, DL-100T485-W, DL-100T485P, DL-100T485P-W (DCON Protocol) DL-100TM485, DL-100TM485-W, DL-100TM485P, DL-100TM485P-W (Modbus RTU Protocol)

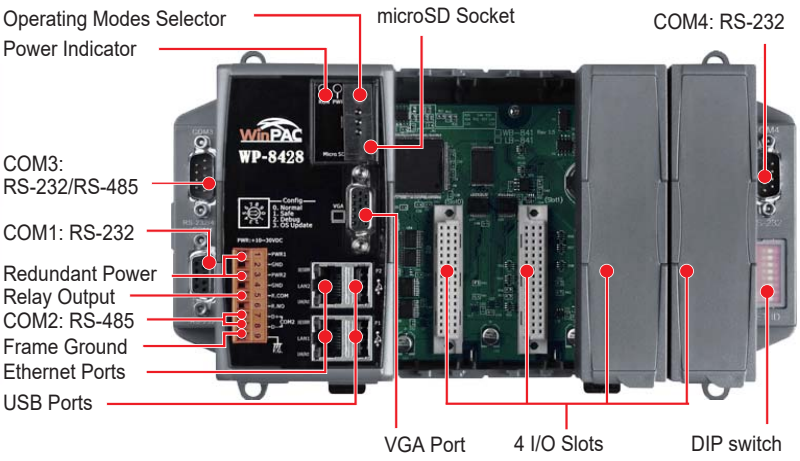
*** Note: The COM6 ~ COM37 ports are located in the expansion boards if they are installed in slot 0~7 of WP-8xx8-CE7**
*** WP-8128-CE7 has no COM3 and COM4.**
*** ICP DAS recommends using NS-205/208 or RS-405/408 (Ring Switch) Industrial Ethernet Switches.**

Appearance

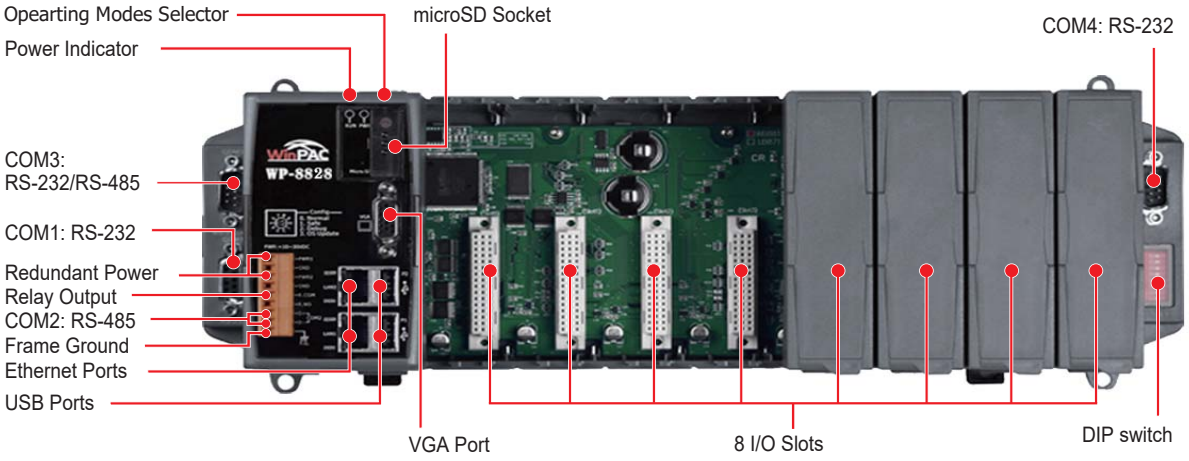
WP-8128-CE7



WP-8428-CE7



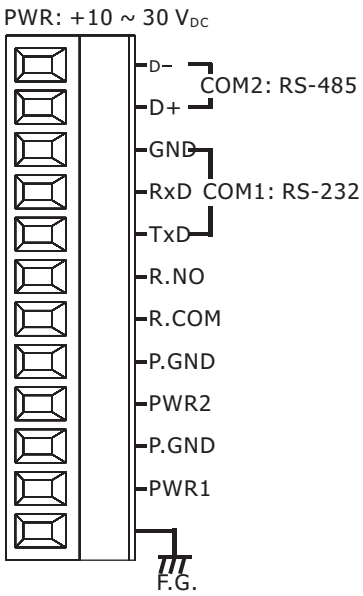
WP-8828-CE7



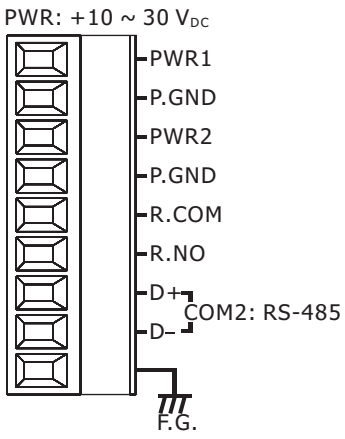
Pin Assignment

Terminal Block

WP-8128-CE7

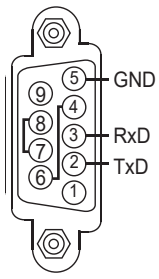


WP-8428-CE7/WP-8828-CE7

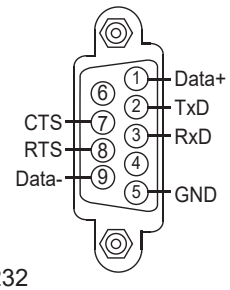


WP-8428-CE7/WP-8828-CE7 COM Port

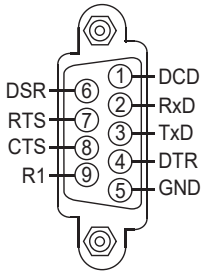
COM1: RS-232



COM3: RS-232/RS-485

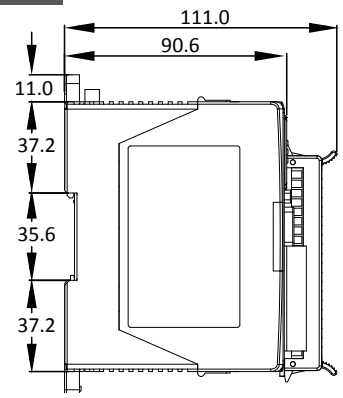


COM4: RS-232

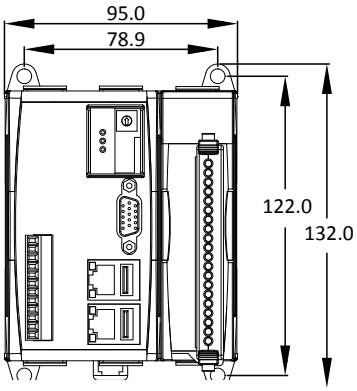


Appearance

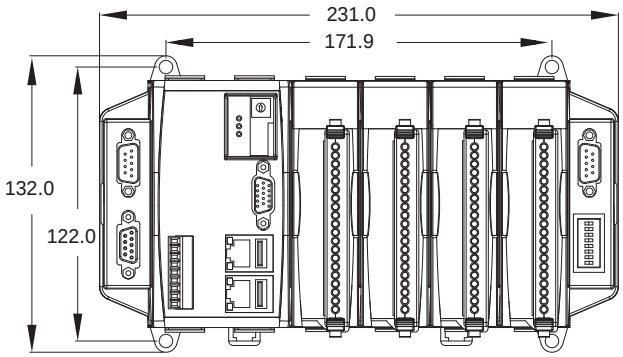
Top View



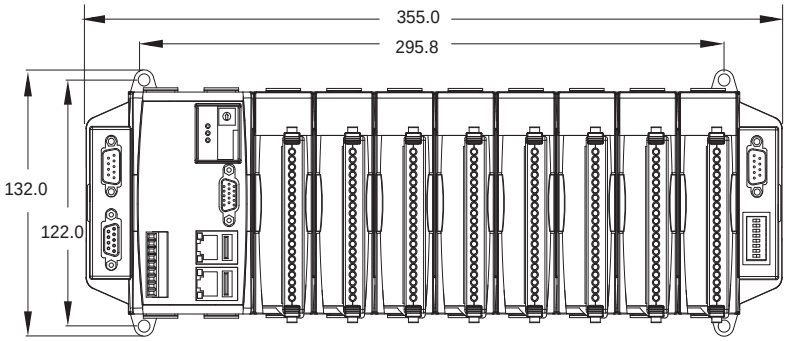
Front View WP-8128-CE7



Front View WP-8428-CE7



Front View WP-8828-CE7



Ordering Information

WP-8128-CE7	Win-GRAF based WinPAC-8000-CE7 with 1 I/O Slot
WP-8428-CE7	Win-GRAF based WinPAC-8000-CE7 with 4 I/O Slots
WP-8828-CE7	Win-GRAF based WinPAC-8000-CE7 with 8 I/O Slots

Related Products / Accessories

Win-GRAF Development Software	
Win-GRAF Workbench	Win-GRAF Workbench Software (Large I/O Tags) with one USB Dongle
Accessories	
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 CR	24 VDC/5.0 A, 120 W Power Supply with DIN-Rail Mounting (RoHS)
MDR-60-24 CR	24 VDC/2.5 A, 60 W Power Supply with DIN-Rail Mounting (RoHS)
NS-205 CR / NS-208 CR	5-port / 8-port Unmanaged Industrial 10/100 Ethernet Switch with Plastic Case (RoHS)
RS-405 CR / RS-408 CR	5-port / 8-port Real-time Redundant Ring Switch (RoHS)
TPM-4100 / TP-4100	10.4" (800 x 600) resistive touch panel monitor with RS-232 or USB interface