



WP-9228-CE7 **WP-9428-CE7**



WP-9828-CE7

Win-GRAF based WinPAC-9000-CE7

Features

- Cortex-A8, 1GHz CPU
- 512 MB SDRAM and 256 MB Flash
- Windows CE 7.0 Professional
- Embedded Win-GRAF SoftLogic (IEC 61131-3)
- VGA Port Output
- Modbus RTU/TCP (Master, Slave)
- Support eLogger HMI
- Redundant Power Inputs

Introduction

The Win-GRAF WinPAC-9000-CE7 Series (WP-9228-CE7/9428-CE7/9828-CE7) by ICP DAS is the latest generation of Windows CE 7.0 based PACs (Programmable Automation Controllers). Each model features a Cortex-A8 (1.0 GHz) CPU, a Windows CE 7.0 operating system, and a variety of input/output ports (VGA, USB, Ethernet, RS-232/485). Additionally, they offer 2, 4, or 8 expansion I/O slots compatible with high-performance I-9K (parallel-type) and I-97K (serial-type) series I/O modules.

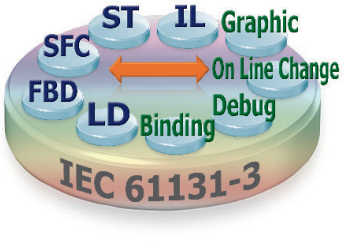
Running Windows CE 7.0 on a WinPAC device offers several advantages, including hard real-time capability, achievable deterministic control, and a PC-like window display and operating environment. The WP-9x28-CE7 series PACs support Win-GRAF (IEC 61131-3 Standard) software for developing logic control applications. Additionally, they support MS VS 2008 software (VB .NET, C#) for developing HMI and data management applications that can seamlessly exchange data with Win-GRAF applications. This makes application design more convenient and practical.

Win-GRAF

Win-GRAF is a soft logic programming platform compliant with the IEC 61131-3 standard, designed for developing industrial control and automation solutions. It serves as a framework that allows users to create customized applications for various industrial systems, such as Programmable Logic Controllers (PLCs), Remote Terminal Units (RTUs), and embedded controllers. The Workbench supports all IEC 61131-3 programming languages, including Structured Text (ST), Function Block Diagram (FBD), Ladder Diagram (LD), Instruction List (IL), and Sequential Function Chart (SFC). With diverse libraries and built-in function blocks, it works seamlessly with all ICP DAS Win-GRAF controllers for fast and efficient development.

The features of the Win-GRAF:

- IEC 61131-3 Standard Open PLC Syntax (LD, FBD, SFC, ST, IL)
- Open Architecture: to integrate and customize for specific applications
- Event Triggered Data Binding (Exchange Data between PACs)
- Provide IDE: includes a user-friendly graphical user interface
- On Line Program Modification
- Various Protocols
- Plenty of Functions, Function Blocks, I/O Boards
- Redundancy





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PAC Specifications

Models		WP-9228-CE7	WP-9428-CE7	WP-9828-CE7
System Software				
OS		Windows CE 7.0		
.Net Compact Framework		3.5		
Embedded Service		FTP server, Web server (support 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		
	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		
Expansion Flash Memory		4 GB SD card (up to 32 GB)		
RTC (Real Time Clock)		Provides seconds, minutes, hours, dates, day of week, month, year		
64-bit Hardware Serial Number		Yes, for Software Copy Protection		
Watchdog Timer		Yes		
Programmable LED Indicator		1		
Rotary Switch		1 x 10 Position (0 ~ 9)		
Buzzer		Yes		
VGA & Communication Ports				
VGA		800 x 600, 1024 x 768		
LED Indicators		1 x System, 2 x Power, 2 x Programmable		
Ethernet		RJ-45 x 2, 10/100/1000 Base-T (Auto-negotiating, Auto MDI/MDI-X, LED indicators)		
USB 2.0		2		
COM0		Internal communication with the I-97K series modules in slots		
COM1		RS-232/485 (RxD, TxD and GND for RS-232; Data+, Data- for RS-485); 3000 VDC isolated		
COM2		RS-485 (Data+, Data-); 3000 VDC isolated		
COM3		RS-232/485 (RxD, TxD, CTS, RTS and GND for RS-232; Data+, Data- for RS-485); 3000 VDC isolated		
COM4		RS-232 (RxD, TxD, CTS, RTS, DSR, DTR, CD, RI and GND); 3000 VDC isolated		
I/O Expansion Slot				
Slot Number		2	4	8
		Note: For High Profile I-9K and I-97K Modules Only		
Mechanical				
Dimensions (W x L x H)		239 mm x 133 mm x 164 mm	300 mm x 133 mm x 164 mm	422 mm x 133 mm x 164 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		3.7A, 5V supply to CPU and backplane, 3.3A, 5V supply to I/O expansion slots, total 8 W	3.8A, 5V supply to CPU and backplane, 3.2A, 5V supply to I/O expansion slots, total 30 W	4.0A, 5V supply to CPU and backplane, 3.0A, 5V supply to I/O expansion slots, total 30 W
Consumption		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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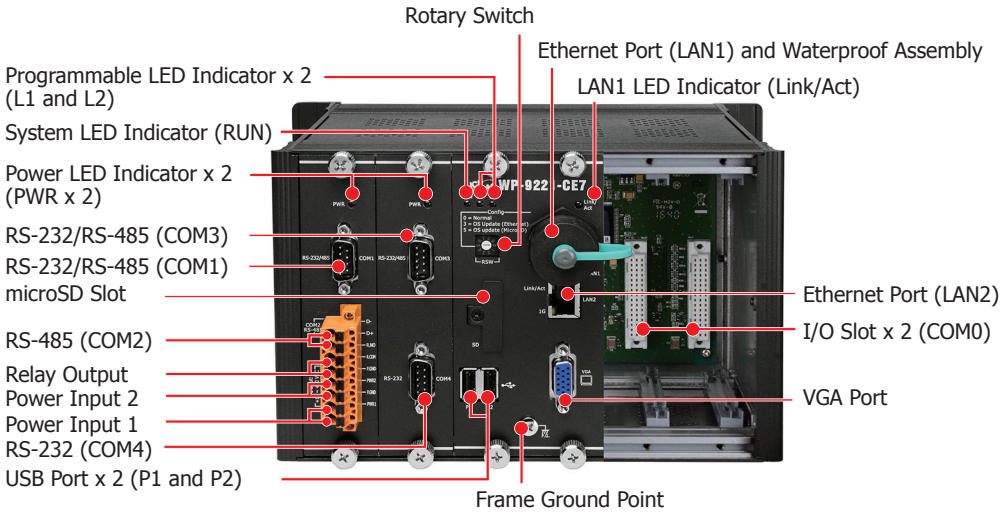
Win-GRAF Specifications

Models	WP-9x28-CE7
Protocols (Note that certain protocols require optional devices)	
OPC UA Server	The OPC UA Server is an application that provides data and information, serving as the core of OPC UA technology. It is responsible for managing, collecting, storing, and distributing data. Acting as a central controller, the OPC UA Server connects with various clients to facilitate data access and exchange.
Modbus TCP/IP Master	Supports connection of up to 32 IP devices
Modbus TCP/IP Slave	Supported. Up to 32 connections supported via two Ethernet ports (LAN1 & LAN2).
Modbus RTU/ASCII Master	Supported. Up to 16(*) communication ports.
Modbus RTU Slave	Supported. Up to 16(*) communication ports.
User-defined Protocol	Supported. Up to 16(*) communication ports.
Functions	
eLogger HMI	Supports eLogger.
Password Protection	Equipped with a built-in 64-bit (8-byte) hardware serial number and a proprietary algorithm that generates authentication codes to effectively protect the security of Win-GRAF programs.
Data Binding	Supported. Enables data exchange between Win-GRAF Runtime devices.
Online Program Modification	Supports the On-line Change function.
Retain Variables	Supported. Up to 120K bytes of non-volatile memory for data retain after power loss.
File Access & Data Log	Supports file Read/Write.
Additional I/O Module Support	
Local I/O Modules	Supports I-9K and I-97K high-profile I/O modules.
Modbus TCP I/O	Supports ET-7000 series, I-8KE4/8-MTCP, and tPET/tET series I/O modules.
Modbus RTU I/O	Supports M-7000 series, tM series, and LC series I/O modules.
DCON Remote I/O	Supports I-7000 series, M-7000 series, and I-87K expansion units.
***The number of COM ports depends on the model configuration and the use of expansion communication modules (e.g., I-8144iW, I-8142iW, I-8112iW, I-8114iW…)**	

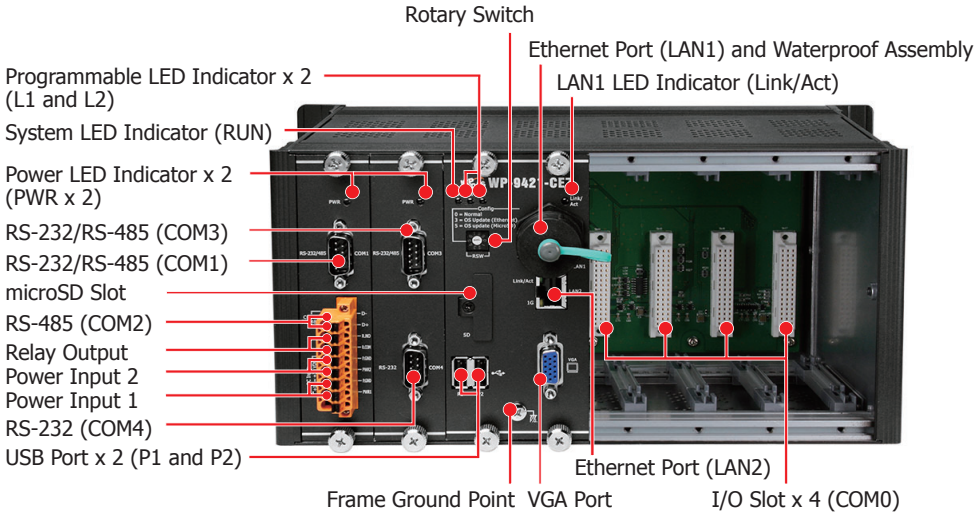
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Appearance

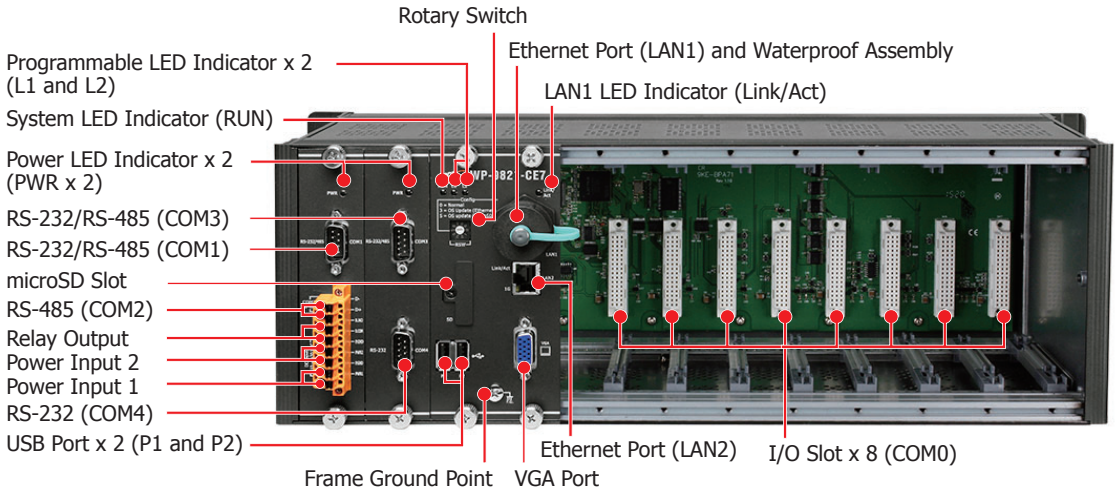
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WP-9428-CE7



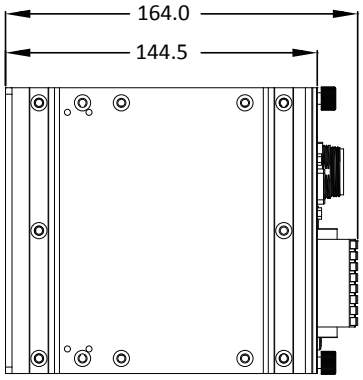
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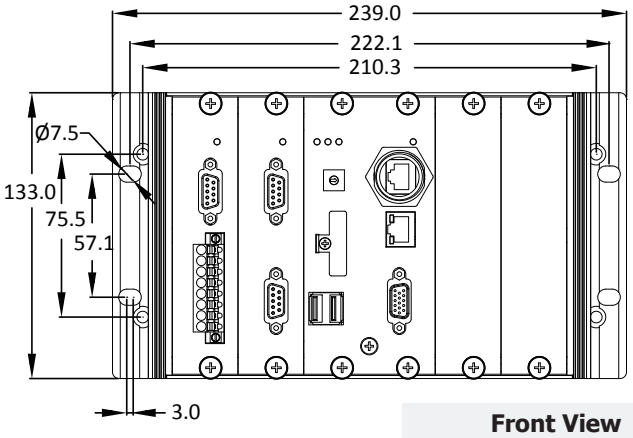
Dimensions

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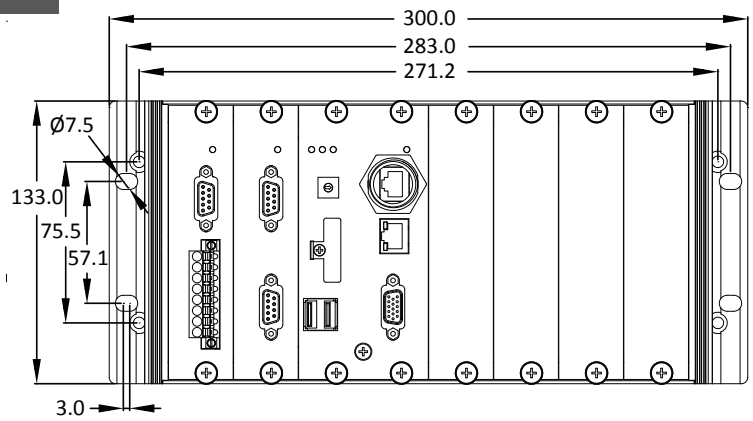
Left View

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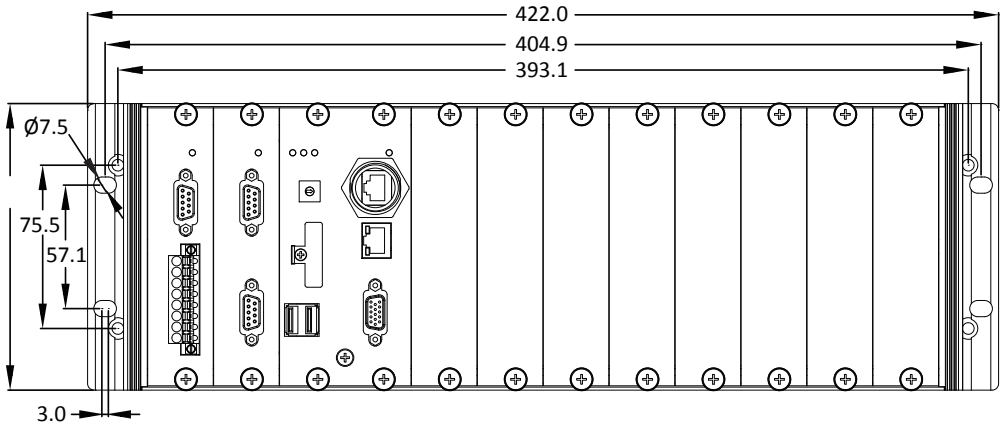


Front View

WP-9428-CE7



WP-9828-CE7



Ordering Information

WP-9228-CE7 CR	2-slot Win-GRAF Based PAC with Cortex-A8 CPU and WinCE 7.0
WP-9428-CE7 CR	4-slot Win-GRAF Based PAC with Cortex-A8 CPU and WinCE 7.0
WP-9828-CE7 CR	8-slot Win-GRAF Based PAC with Cortex-A8 CPU and WinCE 7.0

Related Products

Win-GRAF Development Software	
Win-GRAF Workbench	Win-GRAF Workbench Software with one USB Dongle
WGW-S-License	Win-GRAF Workbench Software License

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