

# Win-GRAF ViewPAC



VP-6208-CE7 VP-5208-CE7  
VP-4208-CE7 VP-3208-CE7 VP-2208-CE7

## Features

- 15", 12.1", 10.4", 8.4", 7" TFT LCD
- Cortex-A8, 720 MHz/1 GHz CPU
- CE7 (Windows Embedded Compact 7)
- Embedded Win-GRAF SoftLogic (IEC 61131-3)
- Hard Real-Time Capability
- PoE (Power over Ethernet)
- NEMA 4/IP65 Compliant Front Panel
- Modbus RTU/TCP (Master, Slave)
- Support eLogger HMI
- Audio with Earphone-Out
- Operating Temperature: -10 °C ~ +60 °C



## Introduction

The **Win-GRAF ViewPAC Series (VP-2208-CE7/VP-3208-CE7/VP-4208-CE7/VP-5208-CE7/VP-6208-CE7)** are WinCE7 based Win-GRAF SoftLogic ViewPAC that combine computing and operator interface into a single unit, and provide the perfect solution for integrating HMI, data acquisition and control in an individual PAC. It is equipped with a Cortex-A8 (720 MHz/1 GHz) CPU, TFT LCD and a variety of connectives including Gigabit Ethernet, USB port, RS-232 and RS-485 interface. I/O expansion is available to use our Ethernet I/O modules and RS-485 I/O modules. Designed for panel mount installation, the front panel is NEMA 4/IP65 rated and can withstand sprayed water, humidity and extreme dust. Designed to operate over a wide -10°C ~ 60°C ambient temperature range, the fanless design offers the ultimate in reliability with no moving parts.

The Win-GRAF ViewPAC are capable of running Win-GRAF (IEC 61131-3 Standard) software to develop logic control, and also provide a free HMI software "eLogger" to edit the HMI by graphical drag and drop the HMI objects, or support M.S. VS 2008 software (VB .NET, C#) to develop HMI and data management applications, and all can exchange data with Win-GRAF applications. So the application's design is more convenient and practical.

## 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.

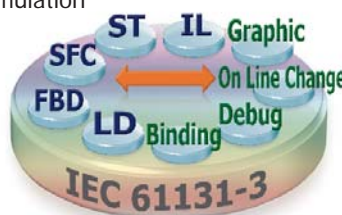
- ★ FTP Server
- ★ Web Server
- ★ SQL Compact Edition 3.5
- ★ .NET Compact Framework 3.5
- ★ Virtual CE Pro (VCEP)

## 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.

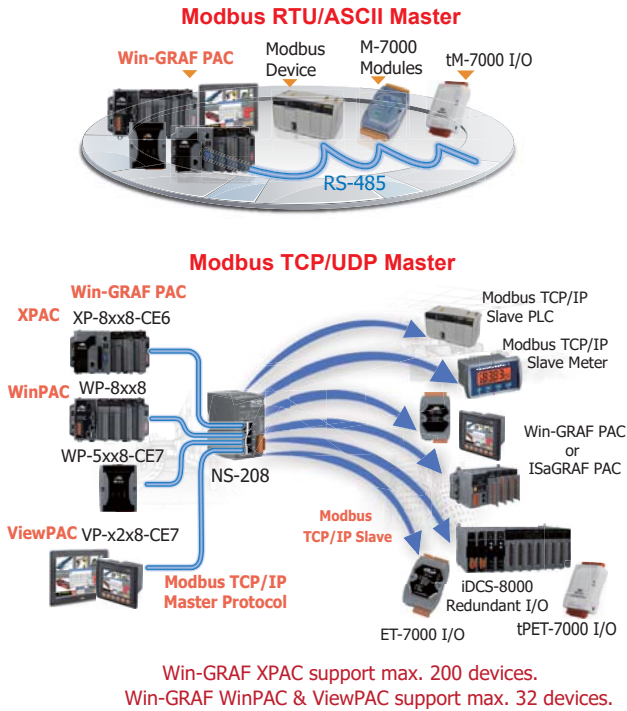
The features of the Win-GRAF:

- 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

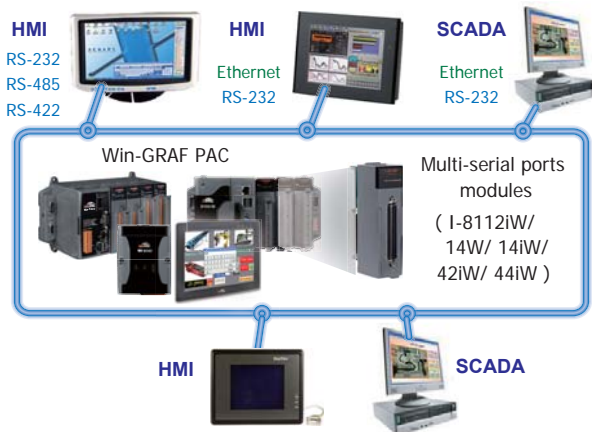


### On Line Change

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



### Modbus RTU/TCP Slave Ports

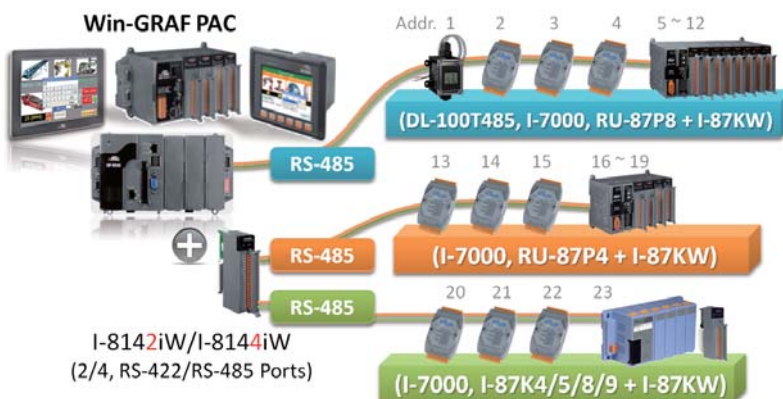


### Support VS 2008 Development

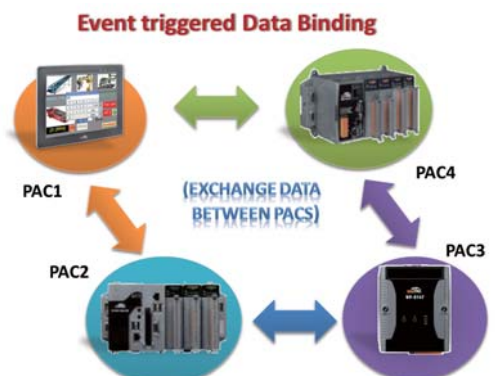
- The Win-GRAF PACs support to use VS 2008 (VB.net, C#) to develop user own HMI and data management programs, and can exchange variables with the Win-GRAF control programs.



### DCON Remote I/O

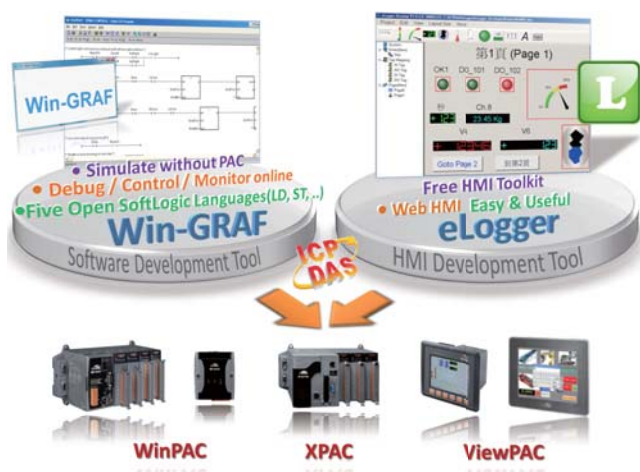


### Data Binding



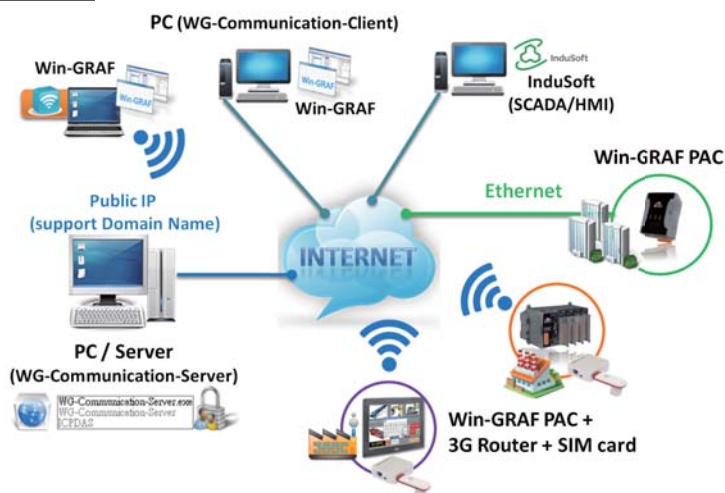


## Schedule Control



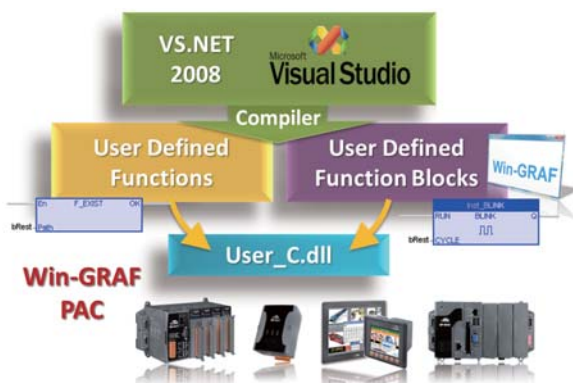
## Intelligent Win-GRAF 3G Solution

- 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).



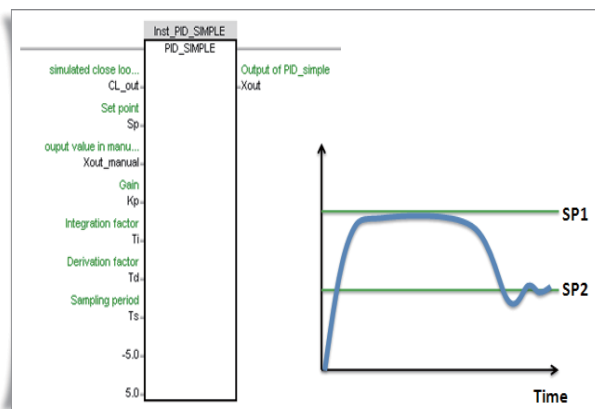
## Create Your Own Functions and Function Blocks

- 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

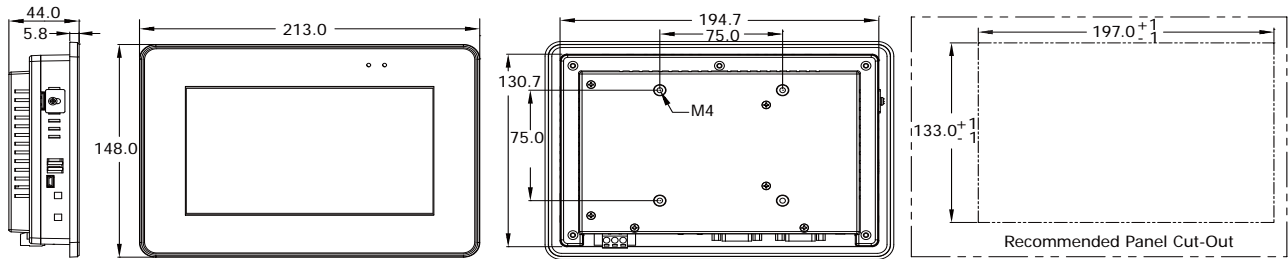
Models	VP-2208-CE7	VP-3208-CE7	VP-4208-CE7	VP-5208-CE7	VP-6208-CE7
LCD					
Diagonal Size	7" (16:9)	8.4" (4:3)	10.4" (4:3)	12.1" (4:3)	15" (4:3)
Resolution	800 x 480	800 x 600			1024 x 768
Brightness (cd/m2)	400				
Contrast Ratio	500 : 1				
LED Backlight Life (hrs)	20,000	50,000			
Touch Panel	4-wire, resistive type; light transmission: 80 %	5-wire, resistive type; light transmission: 80 %			
LED Indicator	2 (Run, PWR)				
System Software					
OS	Windows CE 7.0				
Framework Support	.NET Compact Framework 3.5				
Embedded Service	FTP server, Web server (supports VB script, JAVA script), SQL Compact Edition 3.5				
SDK Provided	DII for Visual Studio.Net				
Multilanguage Support	English, German, French, Spanish, Portuguese, 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 (or more)for complex or large program			
Non-Win-GRAF	Options: VS.NET 2008 (VB.NET, C#.NET, C)				
CPU Module					
CPU	Cortex-A8, 720 MHz	Cortex-A8, 1 GHz			
DRAM	512 MB (DDR3)				
MRAM	128 MB				
Flash (SSD)	256 MB				
EEPROM	16 KB				
Memory Expansion	microSD socket with 4 GB micro SDHC card (Support up to 32 GB)	SD socket with 4 GB SDHC 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	0.8 second				
Rotary Switch	0 ~ 9				
Communication Interface					
Ethernet	1 x RJ-45 10/100/1000 Base-TX				
USB 2.0 (host)	2				
COM 1	RS-232/RS-485; 2500 VDC isolated	-	RS-232/RS-485 (DB9 connector); 2500 VDC isolated		
COM 2	RS-232 (TxD, RxD, CTS, RTS) /RS-485 (Data+, Data-) (9-wire DB9 connector); 2500 VDC isolated				
COM 3	-	RS-485 (Data+, Data-, GND); 2500 VDC isolated			
Audio	Earphone-out				
Mechanical					
Dimensions (WxHxD) Unit: mm	213 x 148 x 44	249 x 207 x 64	291 x 229 x 54	324 x 255 x 64	381 x 305 x 63
Panel Cut-Out (W x H)	197 x 133, ± 1	235 x 193, ± 1	277 x 215, ± 1	310 x 241, ± 1	362 x 286, ± 1
Installation	Panel Mounting, VESA (75 x 75) Mounting				
Ingress Protection	Front panel: NEMA 4/IP65				
Environmental					
Temperature	Operating Temperature: -10 °C ~ +60 °C / Storage Temperature: -20 °C ~ +70 °C				
Ambient Relative Humidity	10 ~ 90% RH (non-condensing)				
Power					
Input Range/Power from PoE	+12 VDC ~ +48 VDC / IEEE 802.3af				
Isolation	-	1 kV			1 kV
Consumption	6 W	7.5 W	13 W	14 W	16 W

## Win-GRAF Specifications

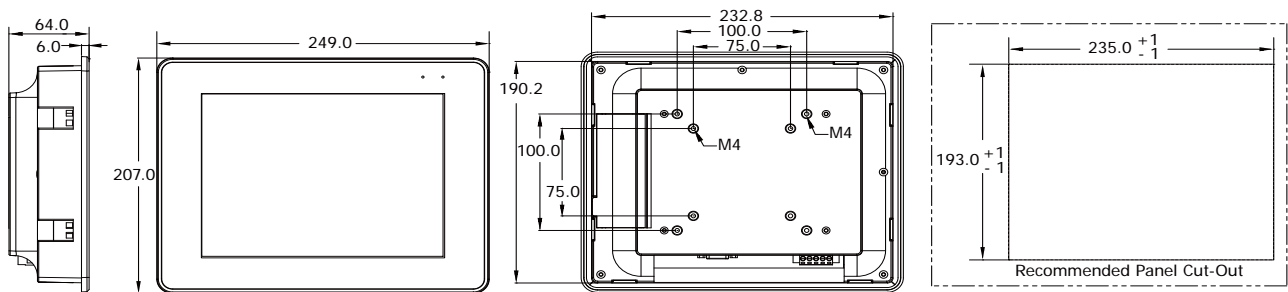
Models	VP-2208-CE7		VP-3208-CE7	VP-4208-CE7, VP-5208-CE7, VP-6208-CE7
Protocols (Note that certain protocols require optional devices)				
NET ID	1~255, for Modbus TCP/RTU Slave, user-assigned			
Modbus TCP Master	A max. of 200 IP links to access/control the devices supporting Standard Modbus TCP Slave protocol.			
Modbus RTU/ASCII Master	Max. 2 RS-485 ports: COM1 ~ 2	Max. 2 RS-485 ports: COM2 ~ 3	Max. 3 RS-485 ports: COM1 ~ 3	
	Using COM ports 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	Max. 2 RS-485 ports: COM1 ~ 2	Max. 2 RS-485 ports: COM2 ~ 3	Max. 3 RS-485 ports: COM1 ~ 3	
	Using COM ports for connecting SCADA/HMI.			
Modbus TCP Slave	One Ethernet ports (LAN1) support up to 64 connections. If the PAC uses 1 connection to connect each PC/HMI, it can connect up to 64 PCs/HMIs; If the PAC uses 2 connections to connect each PC/HMI, it can connect up to 32 PCs/HMIs; If one of the Ethernet port malfunctions, the other one can still be used to connect the PC/HMI.			
User-defined Protocol	COM1 ~ 2	COM2 ~ 3	COM1 ~ 3	
	Custom protocols can be applied at COM by using Serial communication functions or function blocks.			
DCON Remote I/O	Max. 2 RS-485 ports: COM1 ~ 2	Max. 2 RS-485 ports: COM2 ~ 3	Max. 3 RS-485 ports: COM1 ~ 3	
	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.			
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 port (LAN1). The data transmission is event triggered. It is much efficient than polling way.			
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.			
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				
GPS	GPS-721			
<div>* Note: VP-2208-CE7 has no COM3. VP-3208-CE7 has no COM1.</div> <div>* ICP DAS recommends using NS-205/208 or RS-405/408 (Ring Switch) Industrial Ethernet Switches.</div> <div>* For application with 1000 Mbps Ethernet communication, please select proper switch which support 1000 Mbps (like the NS-208AG, ...)</div>				

## Dimensions

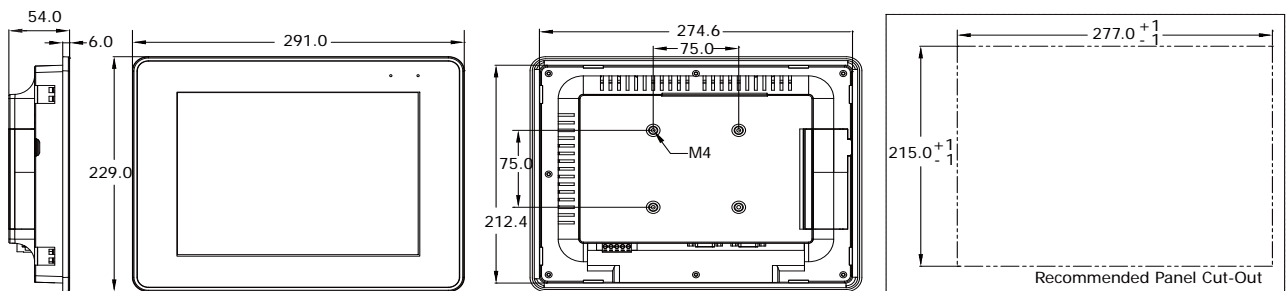
### VP-2208-CE7



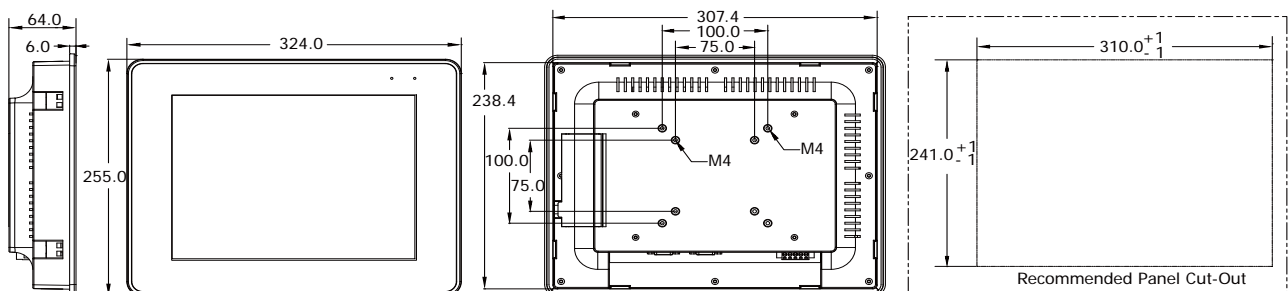
### VP-3208-CE7

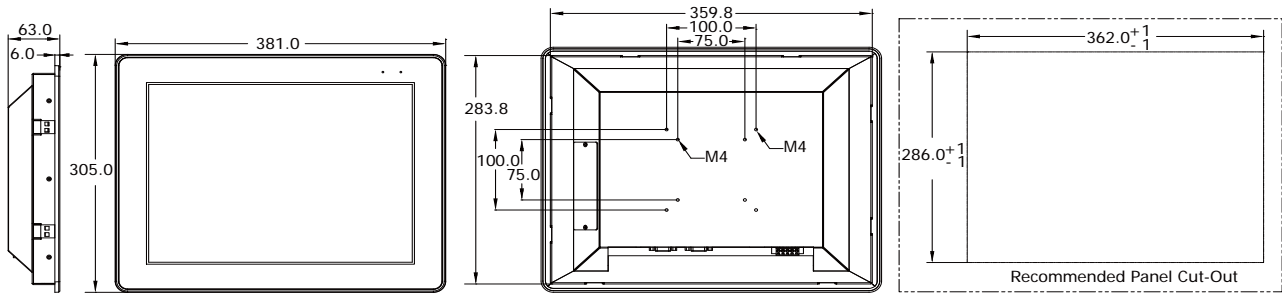


### VP-4208-CE7



### VP-5208-CE7



**VP-6208-CE7**

**Appearance**
**VP-2208-CE7**

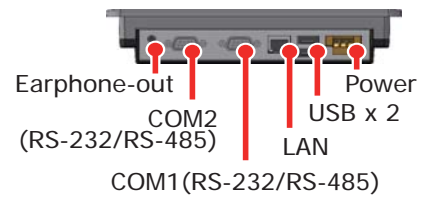
microSD Socket



Rotary SW.

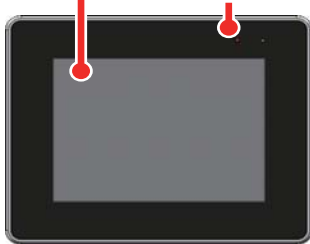
7" LCD Touch Panel

LED Indicator x 2

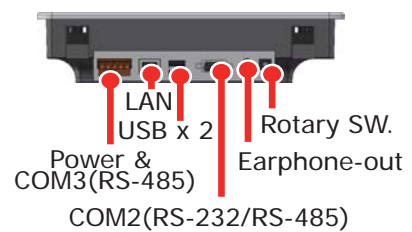

**VP-3208-CE7**

8.4" LCD Touch Panel

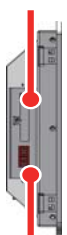
LED Indicator x 2



Console Port


 SD Socket  
DIP SW.

**VP-4208-CE7**

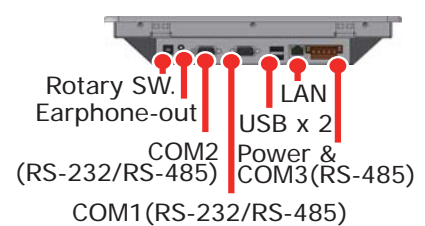
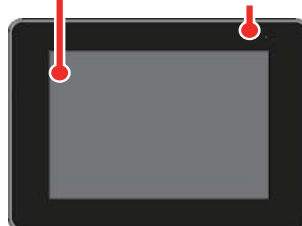
SD Socket



DIP SW.

10" LCD Touch Panel

LED Indicator x 2



### VP-5208-CE7

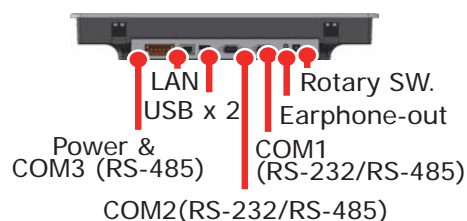
12.1" LCD Touch Panel  
LED Indicator x 2



DIP Switch



SD Socket



### VP-6208-CE7

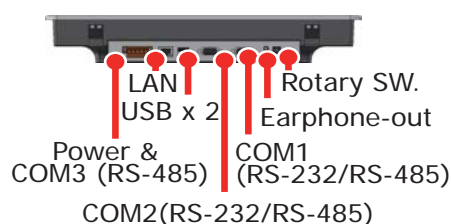
15" LCD Touch Panel  
LED Indicator x 2



DIP Switch



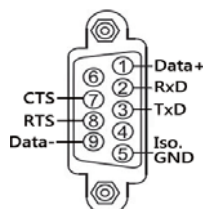
SD Socket



## Pin Assignment

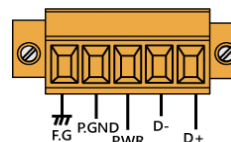
### COM1 & COM2: RS-232/RS-485

COM1:	COM2:
VP-2208-CE7	VP-2208-CE7
VP-4208-CE7	VP-3208-CE7
VP-5208-CE7	VP-4208-CE7
VP-6208-CE7	VP-5208-CE7
VP-6208-CE7	VP-6208-CE7



### COM3: RS-485(D+, D-)

COM3:
VP-3208-CE7
VP-4208-CE7
VP-5208-CE7
VP-6208-CE7



## Ordering Information

VP-2208-CE7 CR	7" Win-GRAF based ViewPAC with Cortex-A8, 720 MHz CPU and CE7 OS (RoHS)
VP-3208-CE7 CR	8.4" Win-GRAF based ViewPAC with Cortex-A8, 1 GHz CPU and CE7 OS (RoHS)
VP-4208-CE7 CR	10.4" Win-GRAF based ViewPAC with Cortex-A8, 1 GHz CPU and CE7 OS (RoHS)
VP-5208-CE7 CR	12.1" Win-GRAF based ViewPAC with Cortex-A8, 1 GHz CPU and CE7 OS (RoHS)
VP-6208-CE7 CR	15" Win-GRAF based ViewPAC with Cortex-A8, 1 GHz CPU and CE7 OS (RoHS)

## Related Products

Win-GRAF Development Software	
Win-GRAF Workbench	Win-GRAF Workbench Software (Large I/O Tags) with one USB Dongle

## Option 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)