

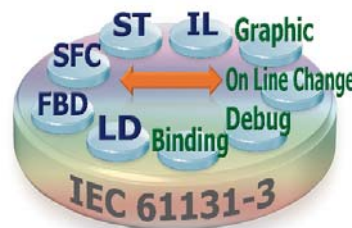
# Win-GRAF

Make Your Application Intelligent

**Win-GRAF** is a powerful SoftLogic development software and PLC-like SoftLogic package that supports IEC 61131-3 Standard Open PLC Languages running on Windows 7 and Windows 8. The Win-GRAF Runtime application can run on any ICP DAS PAC (Programmable Automation Controller) that supports the Win-GRAF, such as the WinPAC series WP-5238-CE7, WP-8xx8, WP-8xx8-CE7 and WP-9xx8-CE7, or the touch panel ViewPAC series VP-x2x8-CE7, or the advanced CPU XPAC series XP-8xx8-CE6. Using the Win-GRAF software with ICP DAS Win-GRAF PACs, the control/monitor systems can easily implement industrial level of data acquisition and logic control in various industry fields.

## ■ Applications:

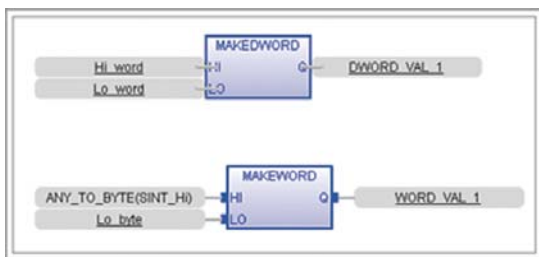
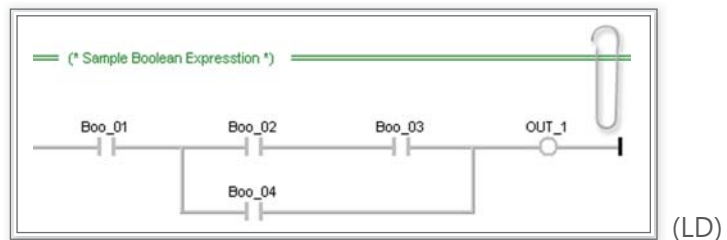
- Data Acquisition System
- Factory Automation
- Building Automation
- Remote I/O system
- Wireless Monitor/Control System
- Motion Control System ...



## ■ Win-GRAF Workbench Features

### ■ Support IEC 61131-3 Standard Open PLC Languages

1. Ladder Diagram (LD)
2. Function Block Diagram (FBD)
3. Sequential Function Chart (SFC)
4. Structured Text (ST)
5. Instruction List (IL)

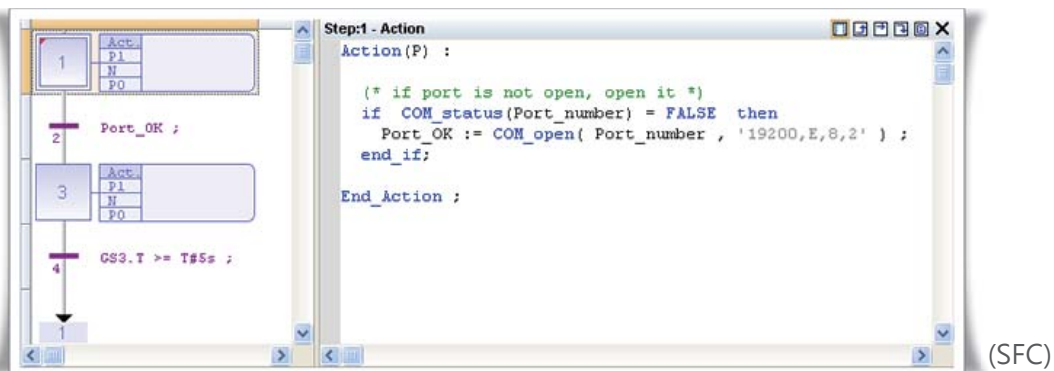


```
(* ii is declared as DINT
Phy_V is declared as REAL array with Dim 8
Eng_V is declared as REAL array with Dim 8
*)

for ii := 0 to 7 do

  (* Using conversion function 2 to convert an
  engineering value to a physical value *)
  Phy_V[ii] := Convert_to_Phy (2, Eng_V[ii]);
end_for;
```

(ST)



## ■ Using ST Syntax in the FBD or LD Program

Using ST syntax in the FBD or LD program

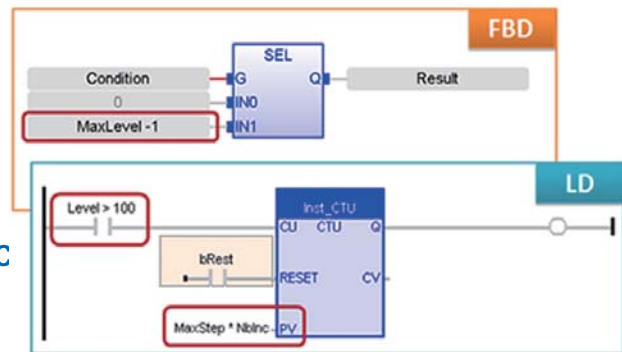
## ■ Online Debugging/Control/Monitoring

## ■ Offline Simulation on the PC

## ■ Upload Source Code From the PAC to the PC

## ■ Spy List

Show several selected variables in one Spy List window.



## ■ Recipe

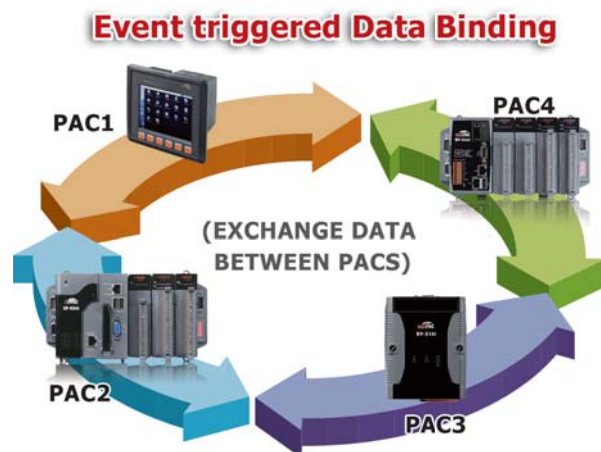
Apply multi-recipes pre-defined in PC/Win-GRAF to PAC.

## ■ Event Triggered Data Binding

Exchange data between PACs (max. 32).

## ■ On Line Change

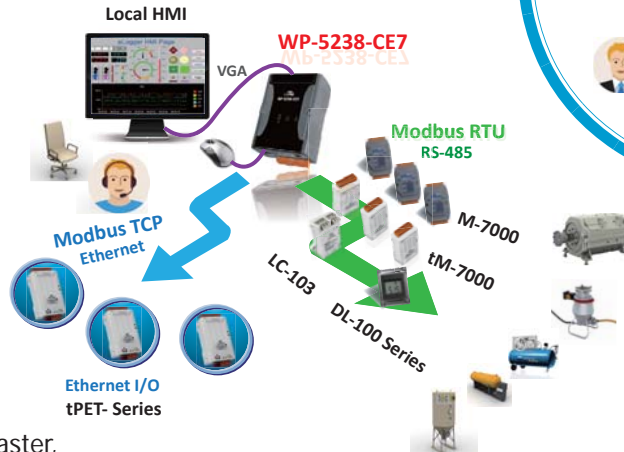
Replace the current running project to a new modified one without stopping the project.



## Win-GRAF PAC Features

### Support eLogger HMI

- eLogger is a free charge and an easy-to-use HMI software platform developed by ICP DAS. It can be used to design the Local HMI and the Web Server HMI for remotely controlling the PAC through a web browser on your PC or cell phone.
- All WinCE Win-GRAF PACs support eLogger HMI.



Web Server HMI (Login)



### Modbus Master Protocol

- Multi-port Modbus RTU, ASCII Master, RS-232/485/422
- Modbus TCP Master (Multiple connections)
- Connect other Modbus PLC, Modbus Master, Modbus I/O and Modbus devices

### Modbus Slave Protocol

- Multi-port Modbus RTU Slave, RS-232/485/422
- Modbus TCP Slave (Multiple connections)
- Connect PC/SCADA/HMI

### Support DCON I/O

Support RS-485 Port to connect the ICP DAS I-7000 I/O modules, and I-87K4/5/8/9 Expansion Unit plus I-87xxxW I/O boards, and RU-87P4/8 Expansion Unit plus I-87xxxW I/O boards.

### Support a Variety of I/O Modules

Support I-8xxxW and I-87xxxW I/O boards, such as: DI, DO, AI, AO, Relay, AC-IN, Thermistor, Thermo Couple, RTD, Strain Gauge, Encoder, PWM output, Counter, Frequency, etc.

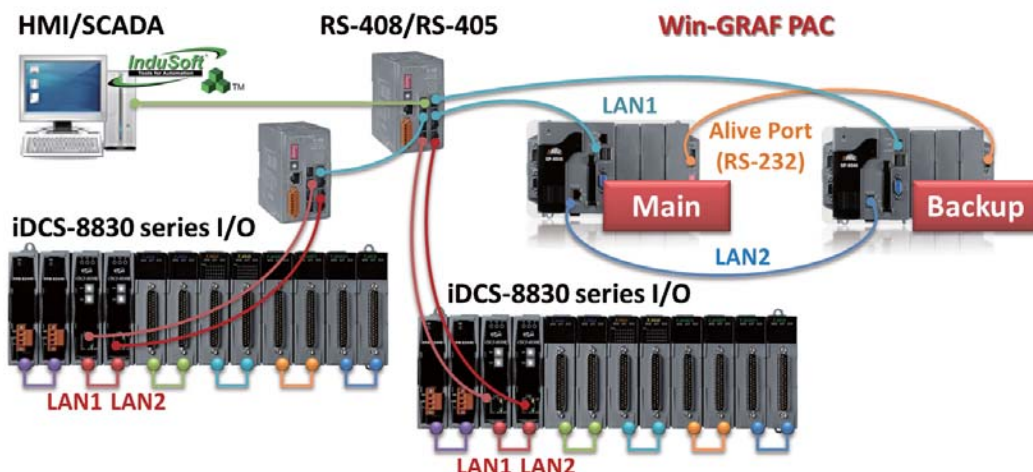
### Support Temperature/Humidity Modules

DL-100T485 and DL-100TM485.

### Support File Access & Data Log

### Redundant Solution

XP-8xx8-CE6 support the Win-GRAF redundant system to achieve the more secure engineering applications. (Both CPU and I/O Modules are Redundant ▼)



### Support Retain Variables

All Win-GRAF PACs support retain variables. Suitable to retain the data changed quickly and frequently.

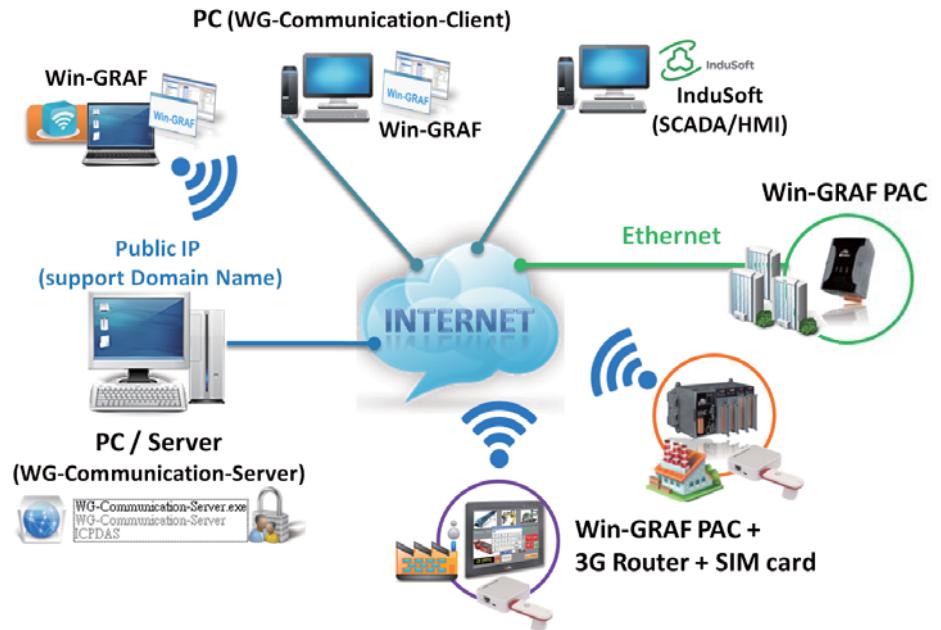
### Protect Application by Own Algorithm

Protect the Win-GRAF application by user-defined algorithm. Even others copy the application to the same model PAC, as long as he cannot get the source code, can not run the application correctly.



## ■ 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).



## ■ Schedule Control

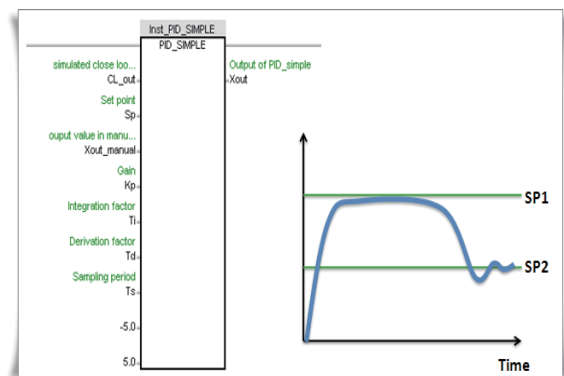


## ■ Support VS 2008 Development

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.

## ■ PID Control

- Can Control more than 200 PID in one PAC.

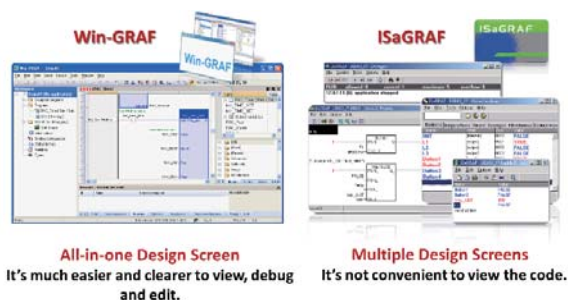


Software	Win-GRAF	C++	VS 2008
Programming	Easy	Hard	Middle hard
SoftLogic	Yes	No	No
Debug	Easy	Hard	Middle hard
Data Management	Win-GRAF integrated with VS 2008 to achieve data management. Powerful, Middle hard	Powerful, Hard	Powerful, Middle hard
Communication	Built-in Modbus TCP, RTU, ASCII, DCON, Data Binding	Hard coding	Hard coding
Program I/O	Easy	Hard	Hard

## Win-GRAF vs. ISaGRAF Advantages

### Development Software Advantages

- Win-GRAF with **all-in-one design screen** is clear, easy and modern.
- **Fast** ! Compiling 100 or more programs needs about 1-5 minutes only.
- Win-GRAF for Window XP, 7, 8 (**32/64-bit**), ISaGRAF for Window XP (32-bit only) OS.



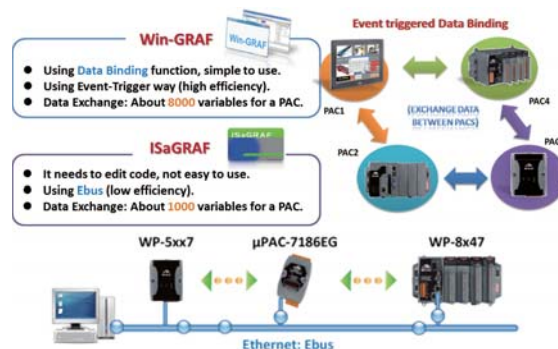
### Number of I/O Tags - up to 10,000

- Win-GRAF Workbench can use up to **10,000** I/O tags.
- ISaGRAF Workbench has a limitation of 256 I/O Tags.



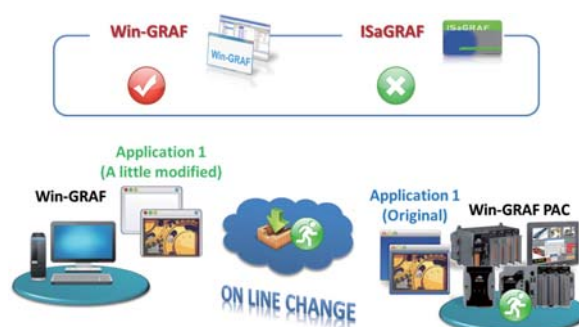
### PAC to PAC Data Exchange Advantages

- Win-GRAF uses **Data Binding**, by Event-trigger (Fast); drag to set (Easy); exchange data about 8000 variables per PAC (More).
- ISaGRAF uses Ebus by Coding, exchange data about 1000 variables per PAC.



### On Line Change Advantages

- Win-GRAF supports **On Line Change**, replace the current running project to a new modified one without stopping the project.
- ISaGRAF does not support.

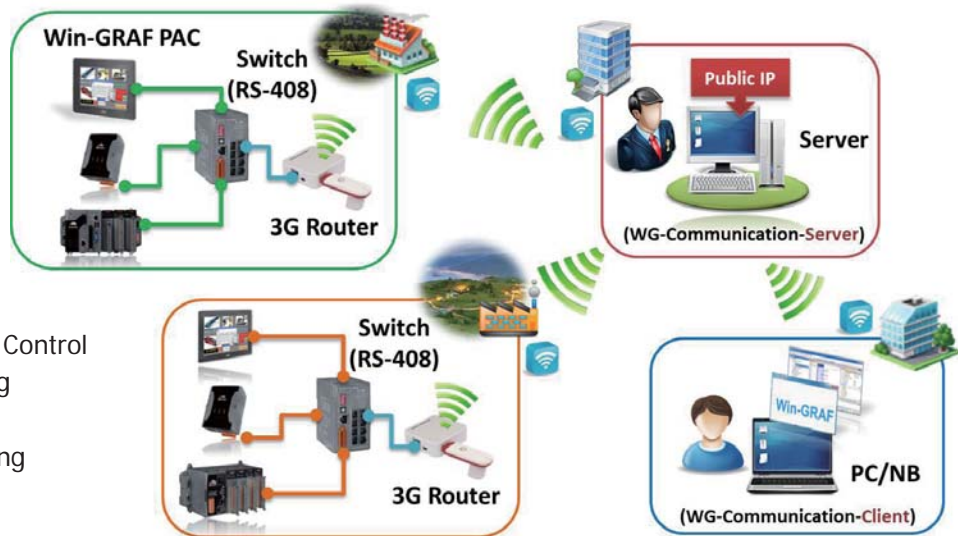


### Win-GRAF More Other Advantages

Item	Win-GRAF	ISaGRAF V. 3.55
<b>ST Syntax</b>	ST can be used in the FBD or LD	ST cannot be used in the FBD or LD
<b>Recipe Tables</b>	Yes, can apply to the PAC directly	-
<b>Function/Function Block</b>	<ul style="list-style-type: none"> <li>• Large numbers</li> <li>• Extensibility: Good</li> </ul>	<ul style="list-style-type: none"> <li>• Max. 255</li> <li>• Extensibility: Limited</li> </ul>
<b>3G Wireless</b>	Intelligent 3G wireless solution	Normal 3G wireless transmission
<b>Redundant System</b>	<ul style="list-style-type: none"> <li>• One public IP, easy to connect</li> <li>• Auto synchronize</li> <li>• Plug and play to replace</li> </ul>	<ul style="list-style-type: none"> <li>• Two public IPs, needs to check</li> <li>• Synchronize via coding</li> <li>• Install App before replacing</li> </ul>
<b>Protocols</b>	<b>Supporting Types and the Max. Connections</b>	
<b>DCON (RS-485)</b>	16 ports	1 port
<b>Modbus RTU</b>	Master: 36 Slave: 16~32	Master: 12 Slave: 9
<b>Modbus TCP</b>	Slave: 64 Except Model WP-8xx8: 32	Slave: 32 Except Model XP-8xx7-CE6: 64
<b>Modbus UDP</b>	Support	-
<b>Send String</b>	Send String via Modbus	-

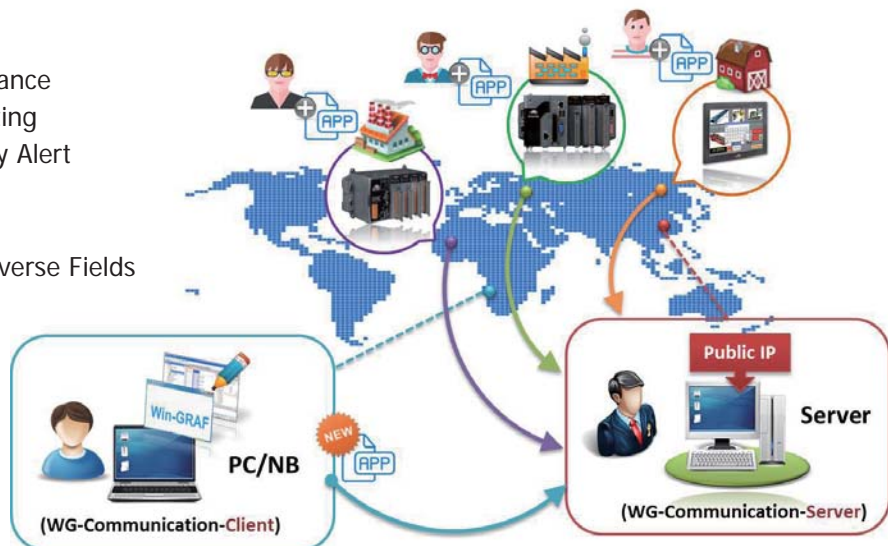
## Win-GRAF Applications

### Intelligent Win-GRAF 3G Solution



- Remote Factory Security Control
- Environmental Monitoring
- Fire Alarm & Prevention
- Building Energy Monitoring

- Multinational Offices Maintenance
- Remote 3G Application Updating
- Remote Conservation Security Alert
- Power Water Management
- Genius Shipping Monitoring
- Emergency Command and Diverse Fields






## Ordering Information

### Win-GRAF Development Software

#### Win-GRAF Workbench



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

Win-GRAF PAC Series	PAC Model	Win-GRAF PAC Series	PAC Model
 ViewPAC Series	VP-x2x8-CE7	 WinPAC Series	WP-5238-CE7 WP-8xx8 WP-8xx8-CE7 WP-9xx8-CE7
 XPAC Series	XP-8xx8-CE6		