Win-GRAF vs. ISaGRAF

	Win-GRAF	**ISaGRAF V. 3.55**
Operating system requirement of PC	Windows XP, Windows 7, Windows 8 (Supports 32-bit and 64-bit CPU)	Windows XP (Only Supports 32-bit CPU)
Development Software	Win-GRAF is a modern SoftLogic programming software which is similar to VS 2008 and VS 2010. It provides the ability to edit multiple programs, variables and functions within a single design screen, which is much easier and clearer to view, debug and edit.	When attempting to use a multiple design environment, each function is opened in its own related settings screen, which is much more complicated when viewing the code, etc.
Compilation	**Fast.** For a large project that contains 100 programs or more, compilation will only take about one to five minutes.	**Slow.** For a large project that contains 100 programs or more, compilation will take from about 15 minutes up to about two or three hours.
On Line Change	Yes. (Replace the current running project to a new modified one without stopping the project.)	This function is not available in ISaGRAF.
PAC to PAC Data Exchange	Data binding is simple and easy. Using an efficient event-trigger approach, a large amount of data can be exchanged via simple drag-and-drop variables. (More than 8000 variables for a PAC)	Using the Ebus function requires specific coding to manage data exchange, which is an inefficient approach and is difficult to use, and only a small amount of data can be exchanged. (Only about 1000 variables for a PAC).
Extensible DCON Port (RS-485 Remote I/O)	Provides support for up to 16 RS-485 DCON Ports for distributed connections to either I-7000 series I/O modules or an RU-87P8 expansion unit plus I-87K I/O modules, which makes I/O scanning more efficient.	Supports only a single RS-485 port for connecting either I-7000 series I/O modules or an RU-87P8 expansion unit plus I-87K I/O modules. Using only one port to scan the I/O is inefficient.
ST Syntax	Supports the use of ST Syntax in the Ladder or FBD graphical editing screen, making the design process easier.	No support for ST Syntax in the Ladder or FBD graphical editing screen.

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Redundant System	1. Each of the XP-8xx8-CE6, WP-9xx8-CE7 (*) devices supports redundancy, which provides a public IP address that allows SCADA/HMI software to access it without needing to determine which one is the Active IP. 2. The system will automatically execute a backup without the need to specify in the code what data should be synchronized. 3. After installing the system, any subsequent maintenance or device replacement is easy, and the code will be automatically copied from the Active PAC to the newly installed PAC via the Ethernet.	1. Both the XP-8xx7-CE6 and WP-8xx7 devices support redundancy. However, the WP-8xx7 provides two public IP addresses, meaning that the SCADA/HMI software needs to decide which one is the Active IP and then connect to it, which is an inconvenient method. 2. In order to perform a system backup, the data that is to be synchronized must be specified in the code, which makes the coding really complicated. 3. If a device is replaced, any existing code must be manually installed on the replacement device before it can be properly operated online.
Recipe Tables	Provides the ability to set up a number of recipe tables and directly apply them to the PAC.	This function is not available in ISaGRAF.
Extensibility	Win-GRAF provides multiple Functions and Function Blocks that support a wide range of software extensions.	ISaGRAF only allows a maximum of 255 Functions and 255 Function Blocks to be designed, and adding new functions is difficult.
Number of I/O Tags	Win-GRAF workbench can use lots of I/O tags (about up to 10,000 I/O tags). If the application has a large amount of I/O tags, it is better to distribute these I/O tags to several PACs to have better scan efficiency. To handle huge I/O tags in one single PAC is not a good idea.	ISaGRAF has a limitation of 256 I/O Tags.

Modbus TCP Slave Connections	XP-8xx8-CE6, WP-5xx8-CE7, WP-9xx8-CE7 (*), VP-x208-CE7 (*)
	 Max. 64 connections.
	WP-8xx8:
	 Max. 32 connections.
		XP-8xx7-CE6:
		  Max. 64 connections.
		WP-8xx7, VP-25W7, VP-4137,VP-5147
		  Max. 32 connections.

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Modbus RTU Slave COM Ports	From 16 to 32 Ports.	Max. 9 Ports.
Modbus RTU Master COM Ports	Max. 36 Ports.	Max. 12 Ports.
Modbus UDP Protocol	Yes. Win-GRAF allows data to be sent via the UDP Protocol.	This function is not available in ISaGRAF.
Send String via Modbus Protocol	Yes. Win-GRAF allows String data to be sent via the Modbus Protocol.	This function is not available in ISaGRAF.

(*) Will be available