



XP-9188-IoT/XP-9388-IoT/XP-9788-IoT

Win-GRAF based Windows 10 IoT PAC

Features

- Windows 10 IoT Enterprise (64-bit)
- Intel® Atom™ E3845 1.91 GHz
- Embedded Win-GRAF SoftLogic (IEC 61131-3)
- 4 GB DDR3 SDRAM
- 64 GB SSD
- VGA / HDMI Display Output
- 2 10/100/1000M Ethernet Ports
- Redundant Power Input



Introduction

The Win-GRAF XP-9000-IoT series are Windows 10 IoT Enterprise based PACs that combine computing, I/O, 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 an Intel E3827/E3845 CPU, 1/3/7 I/O expansion slots and a variety of connectives including dual Gigabit Ethernet, VGA, USB port, RS-232 and RS-485 interface. Local I/O slots are available to use our I-9K and I-97K series I/O modules and remote I/O expansions are available to use Ethernet I/O modules and RS-485 I/O modules.

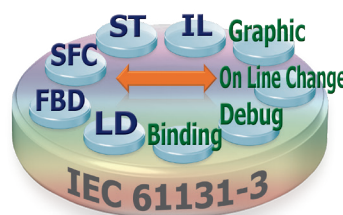
Windows 10 IoT Enterprise runs on 64-bit x86 platform with support for both Universal Windows App and Classic Windows applications.

Win-GRAF

Win-GRAF is an IEC 61131-3-compliant programming platform for developing industrial control and automation solutions. It is a software development framework that enables users to create customized software applications for a wide range of industrial control systems, such as programmable logic controllers (PLCs), remote terminal units (RTUs), and embedded controllers. The workbench supports all standard soft PLC programming languages such as Structure Text, Function Blocks, Ladder, Instruction List and Sequential Function Charts. The platform provides a wide range of libraries and pre-built function blocks that can be used to create complex control systems quickly and efficiently.

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 Change
- Various Protocols
- Plenty of Functions, Function Blocks, I/O Boards
- Redundancy



Specifications

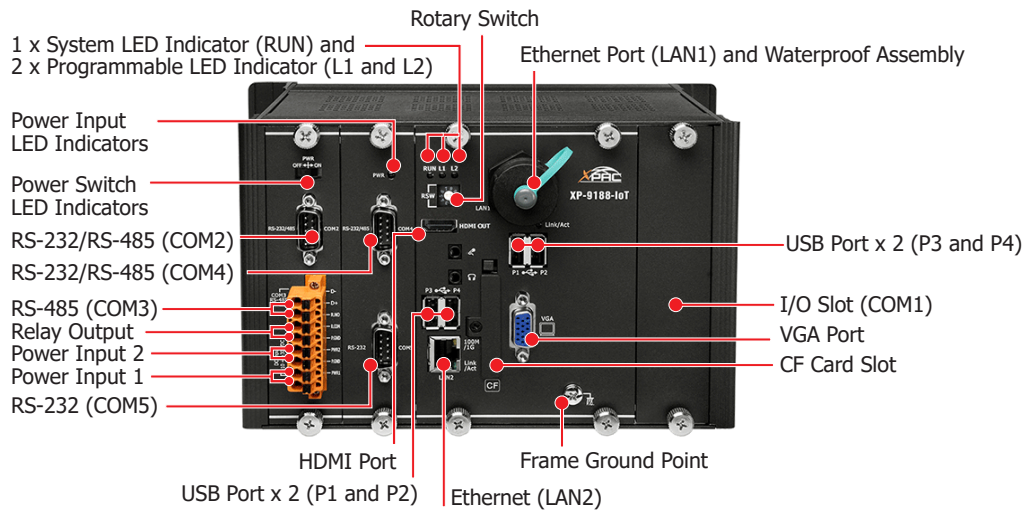
Model	XP-9188-IoT	XP-9388-IoT	XP-9788-IoT
Software			
OS	Windows 10 IoT Enterprise (64-bit)		
Service	IE11, FTP Server, IIS 7.0, ASP (Java Script, VB Script)		
Framework Support	.Net Framework 3.5 ~ 4.8		
Multilanguage Support	English, German, French, Spanish, Portuguese, Russian, Italian, Korean, Japanese, Simplified Chinese, Traditional Chinese		
SDK	DII for VC, DII for Visual Studio.Net		
Main Unit			
CPU	E3845, 1.91 GHz, 64-bit quad core		
64-bit Hardware Serial Number	Yes		
System Memory	4 GB DDR3 SDRAM, 64 GB Flash		
Storage	64 GB SSD, 32 GB CF card		
Non-Volatile Memory	128 KB MRAM, 16 KB EEPROM		
Real Time Clock	Provide seconds, minutes, hours, dates, day of week, month, year		
Watchdog Timer	Dual Watchdog Timer		
Display			
Signal	VGA, HDMI		
Resolution	VGA 1280 x 1024 ~ 1920 x 1080 (16 : 9), 640 x 480 ~ 1024 x 768 (4 : 3) HDMI 2560 x 1600 @ 24bpp		
LED Indicators			
Status	1 x System, 2 x Power, 2 x Programmable		
I/O Expansion			
I/O Type	I-9K, I-97K series		
Slots	1	3	7
COM Ports			
Ports	1 x RS-232 (3000 VDC Isolated), 1 x RS-485 (3000 VDC Isolated), 2 x RS-232/RS-485 (3000 VDC Isolated)		
HMI			
Buzzer	Yes		
Rotary Switch	1 x 10 Position (0 ~ 9)		
Audio			
Socket	Microphone-in and Earphone-out		
Ethernet			
Ports	2 x RJ-45, 10/100/1000 Base-TX		
USB			
Ports	4 x USB 2.0		
Power			
Input Range	+10 ~ 30 VDC (1 kV Isolated)		
Redundant Power Inputs	Yes		
Consumption	18.5 W	18.7 W	20.4 W
Mechanical			
Dimensions(W x L x H)	239 x 164 x 133 mm	300 x 164 x 133 mm	422 x 164 x 133 mm
Installation	DIN-Rail, Wall mounting		
Environmental			
Operating Temperature	-25 ~ +60 ° C		
Storage Temperature	-30 ~ +80 ° C		
Humidity	10 ~ 90 % RH (non-condensing)		

Win-GRAF Specifications

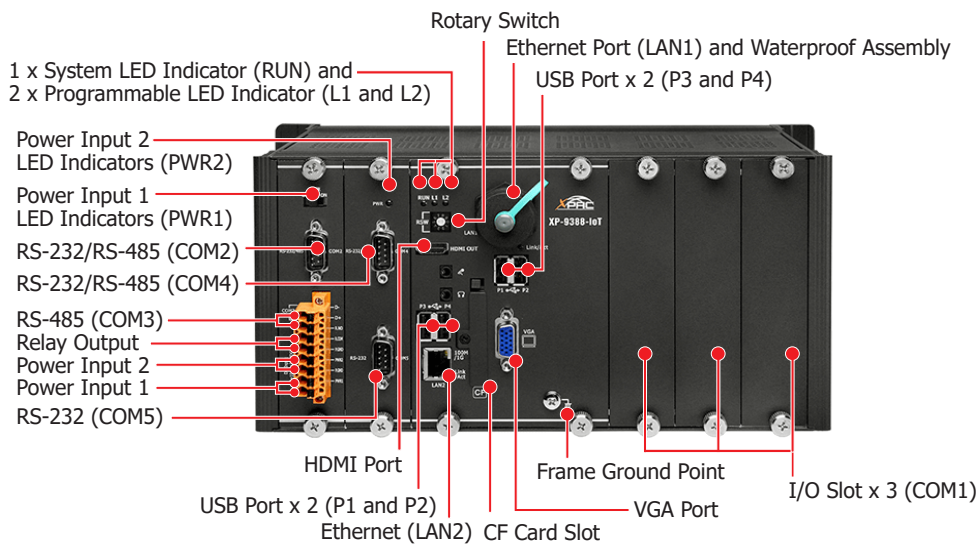
Protocols (Note that certain protocols require optional devices)	
NET ID	1~255, for Modbus TCP/RTU Slave, user-assigned
Modbus TCP/IP Master	A max. of 200 IP links to access/control the devices supporting Standard Modbus TCP/IP Slave protocol.
Modbus RTU/ASCII Master	A max. of 32 ports: COM1 ~ 33 to 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 ~ 33 for connecting SCADA/HMI/OPC Server. (*)
Modbus TCP/IP Slave	Two Ethernet ports (LAN1 & LAN2) 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	Custom protocols can be applied at COM1~33 by using Serial communication functions or function blocks. (*)
DCON Remote I/O	A max. of 16 RS-485 ports: COM1 ~ 33. 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 1~7 supports I-9K parallel I/O modules and I-97K serial I/O modules.
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.
Redundancy	2 XP-9x88-IoT can set a redundant system, when one is damaged or crashes, the other can still take up and continue the work. The system offers 3-line communication redundancy, LAN1, LAN2 and Alive Port, as long as one of the three communication lines still connects normally, this redundant system can normally control the process. The redundant system provides a public IP address that allows SCADA/HMI software to access it without needing to determine which one is the Active IP.
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.
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.

Appearance

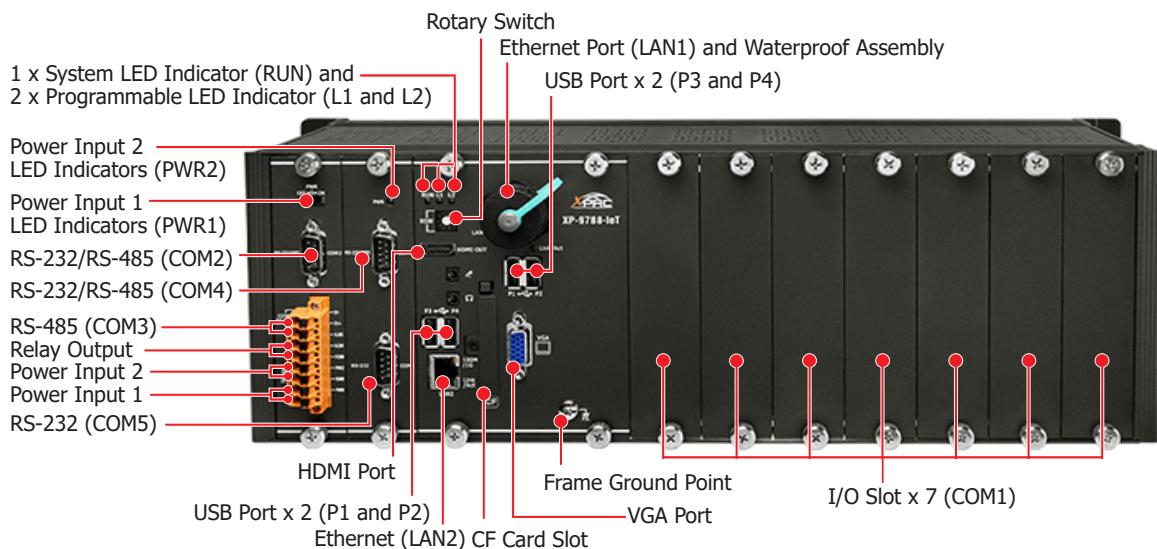
XP-9188-IoT



XP-9388-IoT

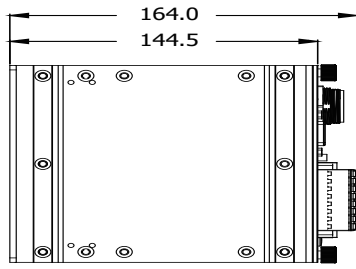


XP-9788-IoT



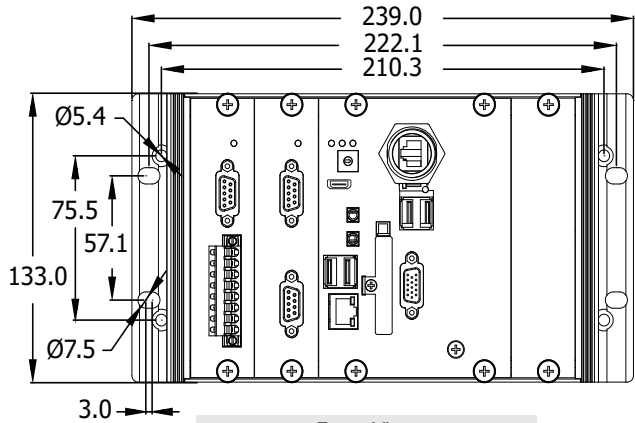
■ Dimensions (Units: mm)

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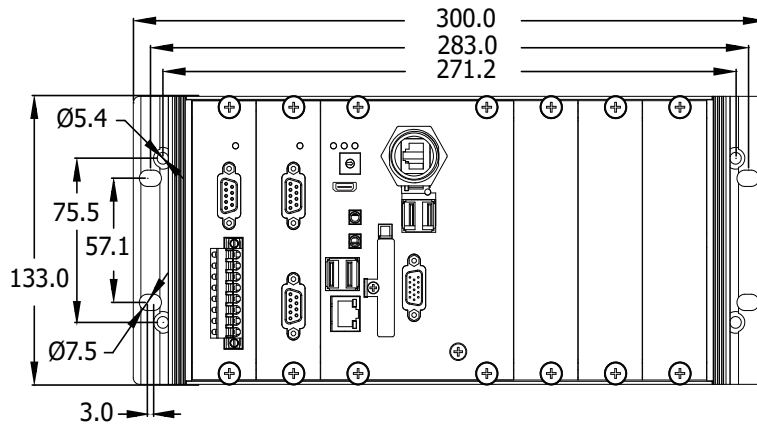
Left Side View

XP-9188-IoT



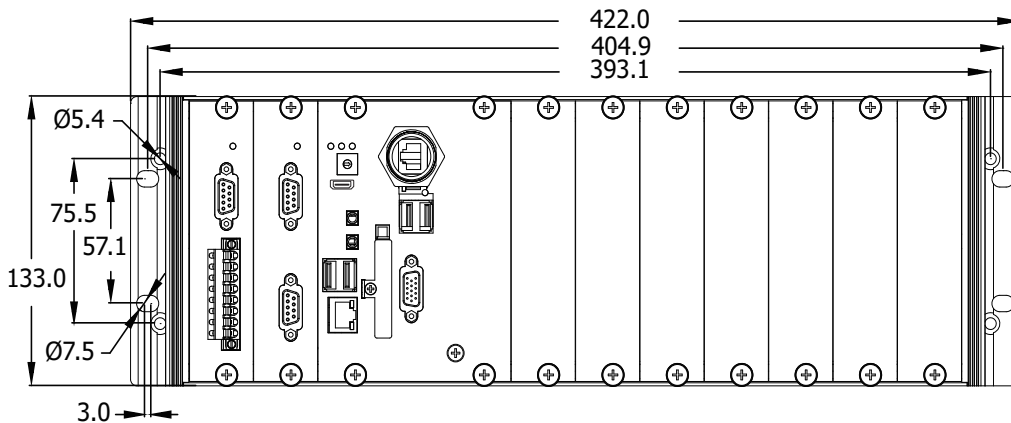
Front View

XP-9388-IoT



Front View

XP-9788-IoT



Front View

■ Ordering Information

XP-9188-IoT CR	1-slot Win-GRAF Metal PAC with E3845 CPU and Windows 10 IoT (RoHS)
XP-9388-IoT CR	3-slot Win-GRAF Metal PAC with E3845 CPU and Windows 10 IoT (RoHS)
XP-9788-IoT CR	7-slot Win-GRAF Metal PAC with E3845 CPU and Windows 10 IoT (RoHS)

■ Related Products

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