



Features

- XP-8x47-CE6 : LX800, 500 MHz CPU
XP-8x47-Atom-CE6 : Atom Z510, 1.1 GHz CPU
- Windows CE 6.0 R3 Core
- ISaGRAF Ver.3 SoftLogic Inside (IEC 61131-3)
- Hard Real-Time Capability
- VGA Port Output
- Modbus RTU/TCP (Master, Slave)
- Support Soft-GRAF HMI
- Redundant Power Inputs
- Operating Temperature: -25 ~ +75°C



Introduction

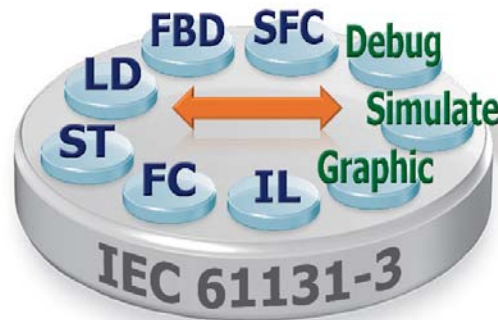
XP-8x47-CE6 and XP-8x47-Atom-CE6 Series are the new generation ISaGRAF based PACs of ICP DAS. It is equipped with an AMD LX800 500 MHz CPU (for XP-8x47-CE6) or Atom Z510 1.1 GHz CPU (for XP-8x47-Atom-CE6), various connectivity (VGA, USB, Ethernet, RS-232/485) and 0/3/7 I/O slots for high performance parallel I/O modules (high profile I-8K Series) and serial I/O modules (high profile I-87K series).

The benefits of running Windows CE 6.0 on XPAC include hard real-time capability, small core size, fast boot speed, interrupt handling at a deeper level and achievable deterministic control. XPAC is also capable of running ISaGRAF and PC-based control software such as Visual Basic .NET, Visual C#,..... etc. It has all of the best features of both traditional PLCs and Windows capable PCs.

ISaGRAF Features

ISaGRAF is the most powerful SoftLogic package on the market. ISaGRAF is a PLC-like software and it supports IEC 61131-3 standard PLC programming languages (LD, FBD, SFC, ST, IL, FC), and can run the application generated by the workbench on any ISaGRAF PACs. The ISaGRAF workbench Ver. 3.x features.

- IEC 61131-3 Standard Open PLC Programming Languages (LD, FBD, SFC, ST, IL, FC) + Flow Chart (FC)
- Auto-Scan I/O
- On-Line Debug/Control/Monitor, Off-Line Simulation
- Simple Graphic HMI
- Support Soft-GRAF HMI

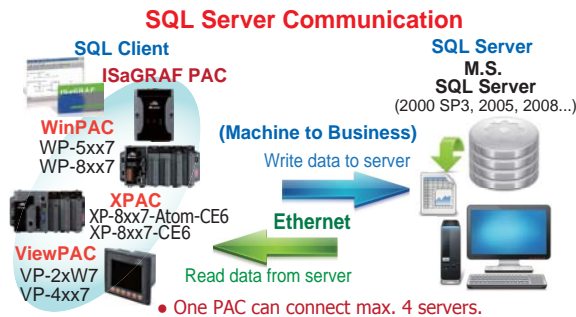


Applications

Soft-GRAF Studio Colorful HMI



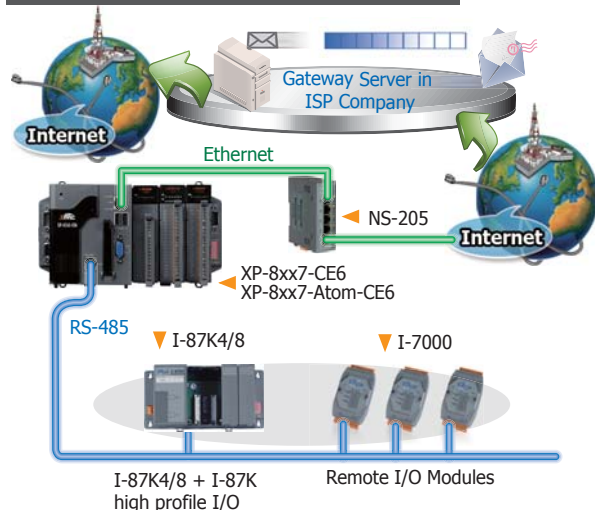
Database Application



Motion Control: Using I-8094F/8092F/8094

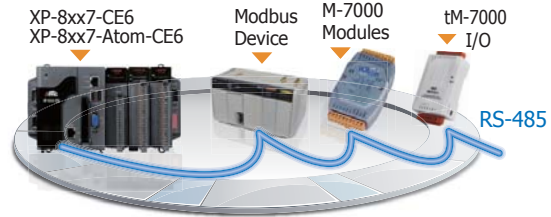


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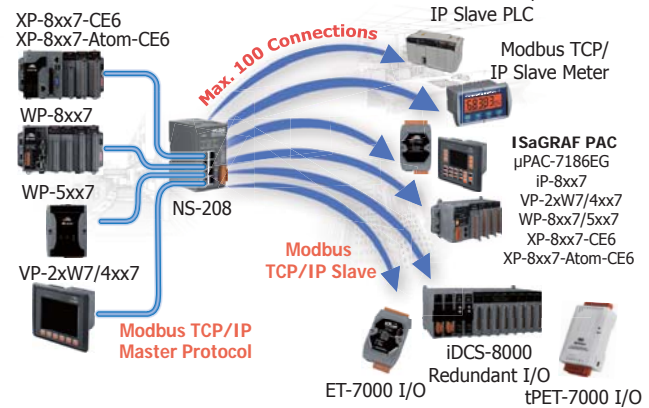


Modbus Master Ports

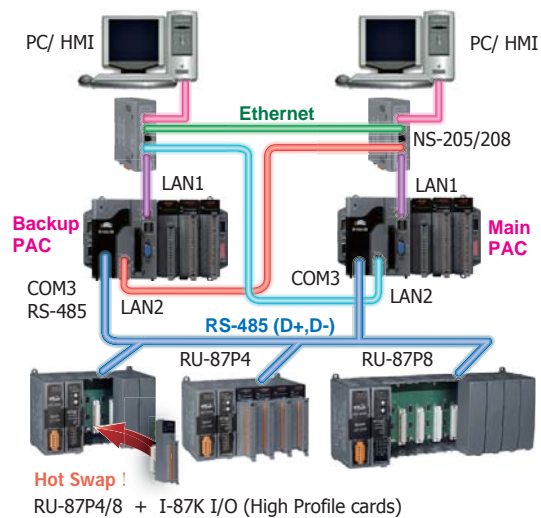
Modbus RTU/ASCII Master



Modbus TCP/IP Master

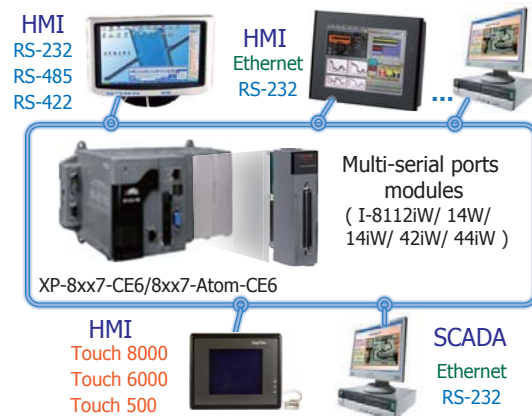


Hot-Swap Redundant System



Modbus Slave : RTU / TCP

- Modbus RTU (RS-232/485/422) Slave: max. 9 ports
- Modbus TCP/IP Slave: max. 64 connections



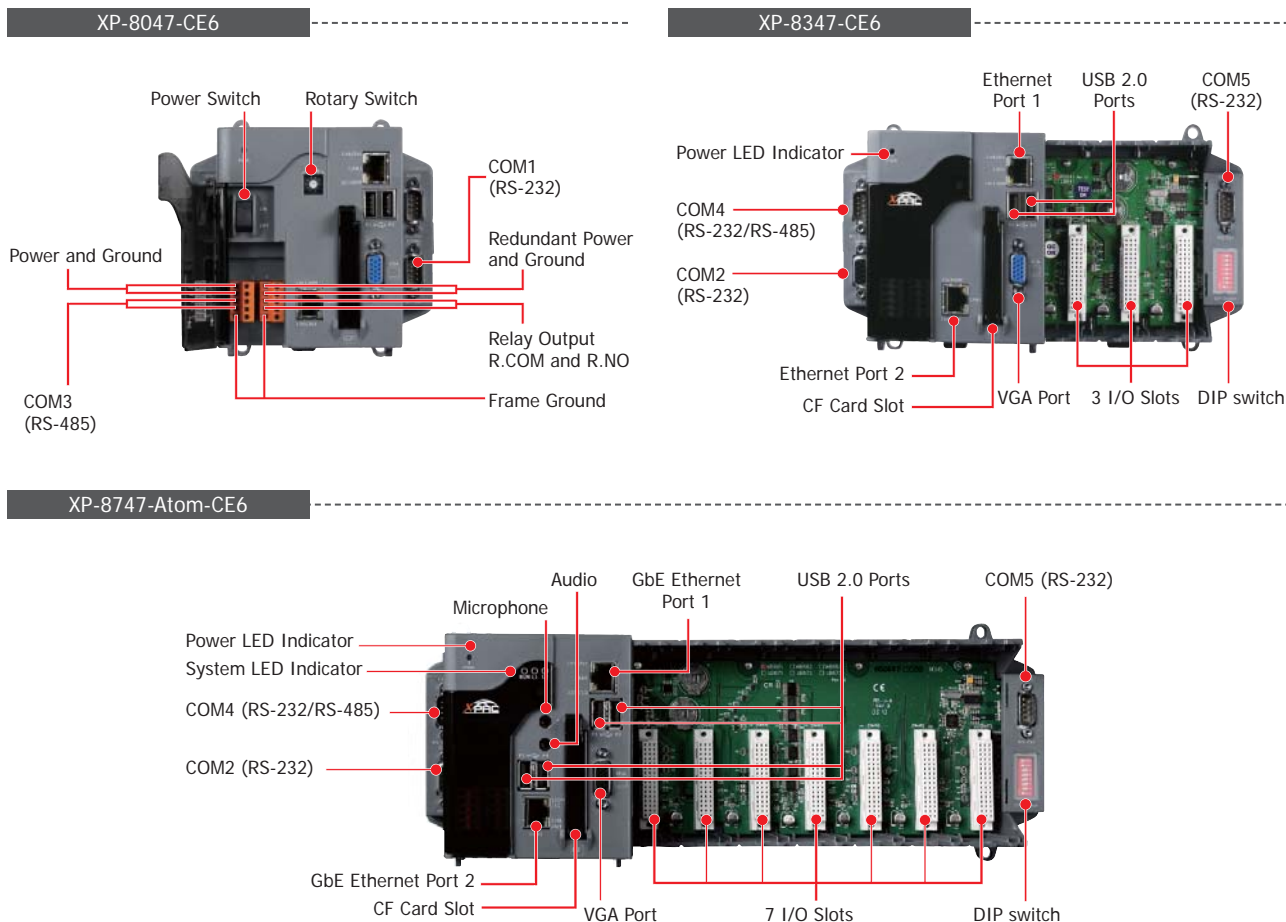
Specifications

Models	XP-8047-CE6	XP-8347-CE6	XP-8747-CE6	XP-8147-Atom-CE6	XP-8347-Atom-CE6	XP-8747-Atom-CE6
System Software						
OS	Windows CE 6.0 R3 Core					
.Net Compact Framework	3.5					
Embedded Service	FTP Server, ASP (Java Script, VB Script), SQL Compact Edition 3.5					
SDK Provided	DII for Visual Studio .Net 2005/2008					
Multilanguage Support	English, German, French, Spanish, Russian, Italian, Czech, Japanese, Korean, Simplified Chinese, Traditional Chinese					
Development Software						
ISaGRAF Software	ISaGRAF Ver.3	IEC 61131-3 standard.				
	Languages	LD, ST, FBD, SFC, IL & FC Support Soft-GRAF HMI: XP-8xx7-CE6, XP-8xx7-Atom-CE6, WP-8xx7/5xx7 and VP-2xW7/4xx7 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-ISaGRAF		Options: VS.NET 2005/2008 (VB.NET, C#.NET)				
Web Service						
Web HMI	PC running Internet Explorer can monitor/control PAC via Internet/modem					
Security	Web HMI supports three levels username and password protection. (high/middle/low)					
CPU Module						
CPU	LX800, 500 MHz			Atom Z510, 1.1 GHz		
System Memory	512 MB DDR SDRAM					
Dual Battery Backup SRAM	512 KB; data valid up to 5 years (for retain variables)					
Flash	4 GB, as IDE Master			2 GB, as IDE Master		
EEPROM	16 KB					
CF Card	Yes, support up to 32 GB					
RTC (Real Time Clock)	Provide second, minute, hour, date, day of week, month, year					
Programmable LED Indicator	-			2		
64-bit Hardware Serial Number	Yes, for Software Copy Protection					
Dual Watchdog Timers	Yes					
Rotary Switch	Yes (0 ~ 9)					
DIP Switch	-	Yes (8 bits)				
Audio	-			Microphone-In and Earphone-Out		
VGA & Communication Ports						
VGA	Yes (resolution: 1024 x 768, 800 x 600, 640 x480)			Yes (resolution: 1400 x 1050, 1024 x 768, 800 x 600, 640 x480)		
Ethernet	RJ-45 x 2, 10/100 Base-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators).					
USB 2.0	2			4		
COM 1	RS-232 (RxD, TxD and GND); non-isolated	Internal communication with the high profile I-87K series modules in slots				
COM 2	RS-232 (RxD, TxD and GND); non-isolated					
COM 3	RS-485 (Data+, Data-) with internal self-tuner ASIC; 3000 VDC isolated					
COM 4	RS-232/RS-485 (RxD, TxD, CTS, RTS and GND for RS-232, Data+ and Data- for RS-485); non-isolated					
COM 5	RS-232 (RxD, TxD, CTS, RTS, DSR, DTR, CD, RI and GND); non-isolated					
I/O Expansion Slots						
Slot Number	0	3	7	1	3	7
	Note: For High Profile I-8K and I-87K Modules Only					
Mechanical						
Dimensions (W x L x H)	137 x 132 x 125 (mm*mm*mm)	231 x 132 x 125 (mm*mm*mm)	355 x 132 x 125 (mm*mm*mm)	169 x 132 x 125 (mm*mm*mm)	231 x 132 x 125 (mm*mm*mm)	355 x 132 x 125 (mm*mm*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	15 W	35 W	35 W	25 W	35 W	35 W
Consumption	14.4 W	14.4 W	16.8 W	16.6 W	16.8 W	18 W

ISaGRAF Specifications

Protocols (some protocols need optional devices)		
Net ID		1 ~ 255, user-assigned by software
Modbus TCP/IP Master		Link to max. 100 devices that support Standard Modbus TCP/IP Slave protocol (FAQ-113)
Modbus RTU/ASCII Master		XP-8047-CE6 : Max. 33 Ports (COM1 ~ 33) (*); Other ISaGRAF XPAC models : Max. 32 Ports (COM2 ~ 33) (*) (To connect to other Modbus Slave devices).
Modbus RTU Slave		XP-8047-CE6 : Max. 9 Ports (COM1 ~ 33) (*); other ISaGRAF XPAC models : Max. 8 Ports (COM2 ~ 33) (*) (For connecting ISaGRAF, PC/HMI/OPC Server & HMI panels).
Modbus TCP/IP Slave		2 Ethernet Ports all support Modbus TCP/IP Slave protocol for connecting ISaGRAF & PC/HMI. 2 Ports support up to 64 connections. Note: If PAC uses 1 connection to connect each PC/HMI, it can connect up to 64 PC/HMI; If PAC uses 2 connections to connect each PC/HMI, it can connect up to 32 PC/HMI; When one Ethernet port is broken, the other one can still connect to PC/HMI.
Web HMI Protocol		Ethernet Ports for connecting PC running Internet Explorer.
User-Defined Protocol		Write own protocol applied at COM2 ~ 33 (XP-8047-CE6 plus COM1) by Serial communication function blocks. (*)
I-7000 & I-87K RS-485 Remote I/O		One of COM3~4 supports I-7000 I/O modules, I-87K base + I-87K Serial I/O boards or RU-87Pn + I-87K High Profile I/O boards as remote I/O. Max. 255 modules of I-7000/87K Remote I/O for one PAC.
M-7000 Series Modbus I/O		Max. 32 RS-485 ports (XP-8047-CE6: max. 33) (*). Each port can connect up to 32 M-7000 Modules.
Modbus TCP/IP I/O		LAN2 supports ICP DAS Ethernet I/O : I-8KE4-MTCP and I-8KE8-MTCP. If LAN2 is broken, it will switch to LAN1 automatically to continuously work. (This need LAN1 & LAN2's IP are set in the same IP domain) (FAQ-042)
FRnet I/O		Support max 7 pcs. I-8172W boards in slot 1 ~ 7 to connect to FRnet I/O modules, like FR-2053, FR-2057 FR-32R, FR-32P. Each I-8172W board can link max. 256 DI plus 256 DO ch. (FAQ-082, 154)
Send Email		Support functions to send Email with one attached file via Ethernet port.
Ebus		To exchange data between ICP DAS's ISaGRAF Ethernet PACs via Ethernet port. (LAN2 Port only)
SMS: Short Message Service		COM4 or COM5 can link to a GSM Modem to support SMS. User can request data/control the controller by cellular phone. The controller can also send data & alarms to user's cellular phone. Optional GSM Modem: GTM-201-RS232 (850/900/1800/1900 GSM/GPRS External Modem)
MMICON/LCD		COM4 or COM5 supports ICP DAS's MMICON.
UDP Server & UDP Client : Exchange Message & Auto-Report		LAN1 or LAN2 support UDP Server and UDP Client protocol to send/receive message to / from PC/HMI or other devices. For example, to automatically report data to InduSoft's RXTX driver.
TCP Client : Exchange Message & Auto-Report		LAN1 or LAN2 support TCP Client protocol to send / receive message to / from PC/HMI or other devices which support TCP server protocol.
GPRS/SMS		Support the I-8212W (2G/3G) card to receive/send a short message or to dial up to link the Internet by GPRS connection to send an email or communicate with remote stations by using "Ftp Client" (FAQ-151) and "TCP Client" / "UDP Server" / "UDP Client" (FAQ-143).
SQL Client		Support SQL Client function to write data to (or read data from) Microsoft SQL Server (2000 SP3, 2005, 2008).
Hot-Swap and Redundant System (Will be available for XP-8xx7-Atom-CE6)		This redundant system has setup two "Active IP" address point to the active LAN1 and LAN2 ports always. One or more PC/HMI/SCADA can communicate with this redundant system via one of the two given active IP. So the PC/HMI/SCADA can access to the system easily without any notice about which PAC is currently active. Moreover, the new redundant system can integrate with the RU-87P4/87P8 Expansion Unit plus the I-87K high-profile I/O cards to support the hot-swap application. If the I/O card is damaged, the maintenance person just takes one good-card with same model number to hot-swap the damaged one without stopping this redundant system. (FAQ-138, 125)
CAN/CANopen		COM2, COM4 ~ 33 (XP-8047-CE6 plus COM1) to connect one I-7530 (converter: RS-232 to CAN) to support CAN/CANopen devices and sensors. One PAC supports max.32 RS-232 ports to connect max.32 I-7530. (*) (FAQ-086)
CANopen Master		Support the I-8123W CANopen Master card to connect other CANopen slave devices. (FAQ-145)
HART Solutions		Support I-87H17W modules in slot 1 to 7 to communicate with other HART devices.
FTP Client		Support FTP client to upload files in the PAC to a remote FTP server on PC. (FAQ-151) Soft-GRAF's g_Alarm & g_Logger1 HMI objects support FTP client, too. (FAQ-146)
Soft-GRAF HMI		Support the Soft-GRAF HMI . User can use the Soft-GRAF Studio on the PC to design the HMI screen and then download it to the PAC to display the HMI on the PAC. (FAQ-146)
Optional I/O Functions (Refer to ISaGRAF PAC I/O Selection Guide for I/O Module list)		
PWM Output	High Speed PWM Module	I-7088, I-8088W, I-87088W: 8-ch PWM outputs, software support 1 Hz ~ 100 kHz (non-continuous), duty: 0.1~99.9%
	DO Module as PWM	8-ch max. 250 Hz max. For Off=2 & On=2 ms. Output square wave: Off: 2~32766 ms, On: 2 ~ 32766 ms. Optional DO Boards: I-8037W, 8041W, 8041AW, 8042W, 8050W, 8054W, 8055W, 8056W, 8057W, 8060W, 8063W, 8064W, 8068W, 8069W. (Relay Output boards cannot generate fast square wave)
Counter, Encoder, Frequency	Parallel DI Counter	8 ch. max. for 1 controller. Counter val: 32 bit. 250 Hz max. Min. ON & OFF width must >2 ms. Optional DI boards: I-8040W, 8040PW, 8042W, 8046W, 8048W, 8050W, 8051W, 8052W, 8053W, 8053PW, 8054W, 8055W, 8058W, 8063W.
	Serial DI Counter	Counter input: 100 Hz max. Counter value: 0 ~ 65535 (16 bit) Optional serial I-87K DI boards: I-87040W, 87046W, 87051W, 87052W, 87053W, 87053W-A5, 87054W, 87055W, 87058W, 87059W, 87063W.
	Remote DI Counter	All remote I-7K/I-87K DI modules support counters. 100 Hz max. value: 0 ~ 65535
	High Speed Counter	I-87082W: 100 kHz max., 32-bit; I-8084W: 250 kHz max., 32-bit
	Encoder	I-8093W: 3-axis Encoder Module, max. 1M Hz for quadrant input mode, max. 4 MHz for pulse/direction and cw/ccw input mode. (FAQ-112) I-8084W: 250 kHz max., 4-ch encoder, pulse/direction or up/down or A/B phase (Quad. mode). Not support Encoder Z-index. (FAQ-100)
	Frequency	I-87082W: 2-ch, 1 Hz ~ 100 kHz; I-87088W: 8-ch, 0.1 Hz ~ 500 kHz; I-8084W: 8-ch, 1 Hz ~ 250 kHz;
Motion	Motion Control	Integrate with one or several I-8092F (2-axis) or I-8094F/I-8094 (4-axis). (do not support XP-8047-CE6)
* Note: COM6 ~ COM33 are resided at the expansion boards if they are plugged on slot 1 ~ 7 of XP-8xx7-CE6/XP-8xx7-Atom-CE6. XP-8047-CE6's COM1 is RS-232; other ISaGRAF XPAC's COM1 is for internal communication with I-87K modules in slots only.		
* ISaGRAF FAQ: http://www.icpdas.com/faq/isagraf.htm		
* Recommend to use NS-205/208 or RS-405/408 (Ring Switch) Industrial Ethernet Switch.		

Appearance



Ordering Information

XP-8047-CE6 CR	0 I/O slot WinCE 6.0 Based ISaGRAF XPAC (OS: Multi-Language version) (RoHS)
XP-8347-CE6 CR	3 I/O slots WinCE 6.0 Based ISaGRAF XPAC (OS: Multi-Language version) (RoHS)
XP-8747-CE6 CR	7 I/O slots WinCE 6.0 Based ISaGRAF XPAC (OS: Multi-Language version) (RoHS)
XP-8147-Atom-CE6 CR	1 I/O slot WinCE 6.0 Based ISaGRAF XPAC-Atom (OS: Multi-Language version) (RoHS)
XP-8347-Atom-CE6 CR	3 I/O slots WinCE 6.0 Based ISaGRAF XPAC-Atom (OS: Multi-Language version) (RoHS)
XP-8747-Atom-CE6 CR	7 I/O slots WinCE 6.0 Based ISaGRAF XPAC-Atom (OS: Multi-Language version) (RoHS)
Note: Call for customized XPAC-8000-Atom-CE6	

Accessories

ISaGRAF Development Software	
ISaGRAF-256-E	ISaGRAF Workbench Software Ver.3 (256 I/O Tags) with One Application Book (English version) and one USB Dongle
ISaGRAF-256-C	ISaGRAF Workbench Software Ver.3 (256 I/O Tags) with One Application Book (Chinese version) and one USB Dongle
ISaGRAF-32-E	ISaGRAF Workbench Software Ver.3 (32 I/O Tags) with One Application Book (English version)
ISaGRAF-32-C	ISaGRAF Workbench Software Ver.3 (32 I/O Tags) with One Application Book (Chinese version)
Note: No upgrade service from ISaGRAF-32 to ISaGRAF-256. (Using ISaGRAF-32 can control more than 32 I/O tags. Please refer to ISaGRAF User's Manual Ch. 3.4)	
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)
TPM-4100/TP-4100	10.4" (800 x 600) resistive touch panel monitor with RS-232 or USB interface Accessories: VGA cable, RS-232 cable, USB cable, Mounting clamps and screws