

ISaGRAF®

μPAC

I-7188EG series Embedded Controller with ISaGRAF Inside

80188 40MHz, or compatible CPU

Build-in **ISaGRAF** Ver.3 SoftLogic

Supports **6** PLC automation languages: IEC 61131-3 Standard Languages (**5**) + Flow Chart (**1**)

I-7188EG/EGD

Ethernet ISaGRAF μPAC



I-7188EG

I-7188EGD (with display)



ICP DAS I-7188EG/7188EGD (Ethernet ISaGRAF μPAC) is a palm-size Ethernet ISaGRAF SoftLogic μPAC, supporting popular & easy programming software: ISaGRAF Ver.3. It default has one 10M Ethernet port & 2 serial ports (RS232 & RS485) and supports to plug one X-board to add more ports or I/Os. Small but powerful!

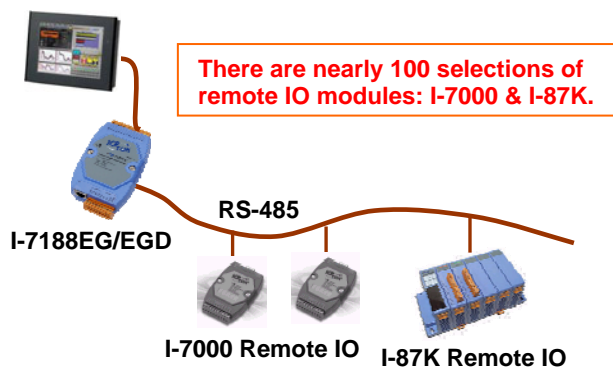
The Ethernet ISaGRAF μPAC supports: Modbus serial protocol, Modbus TCP/IP protocol, Modbus master protocol, Remote I/O, Fbus, Ebus, SMS: Short Message Service, modem link, MMICON / LCD and user defined protocol.

The ISaGRAF μPAC supports ISaGRAF Ver.3 Workbench :

- IEC61131-3 Standard Open PLC Programming Languages: Ladder, Function Block, SFC, ST, IL and Flow Chart.
- Auto-scan I/O
- Simulate program even without controller beside
- Debug on-line
- Control on-line
- Simple graphic HMI



● Remote I/O Application

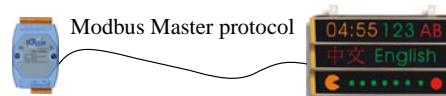


● Data Exchange: Ethernet & RS485

- Through Ethernet: Ebus
- Through RS485: Fbus
- PAC to PAC



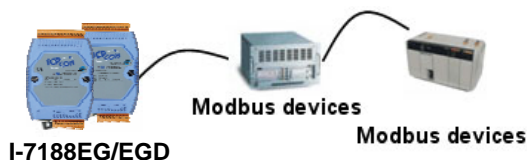
● Support EKAN Modbus LED



● Modbus Master

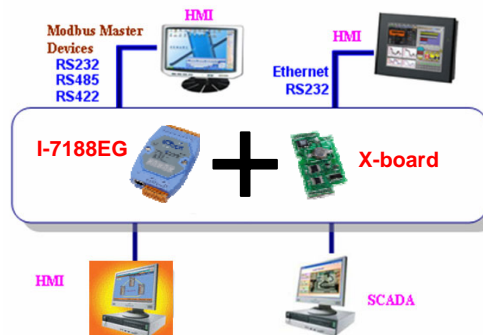
(RTU, ASCII, RS232/485/422)

- COM1:RS232 or COM2:RS485
- COM3: if X-board is plugged in
- Link to Modbus PLC & M-7000 I/O & Modbus devices (Power meter, temperature controller, inverter...)



● Modbus RTU/TCP Slave Ports

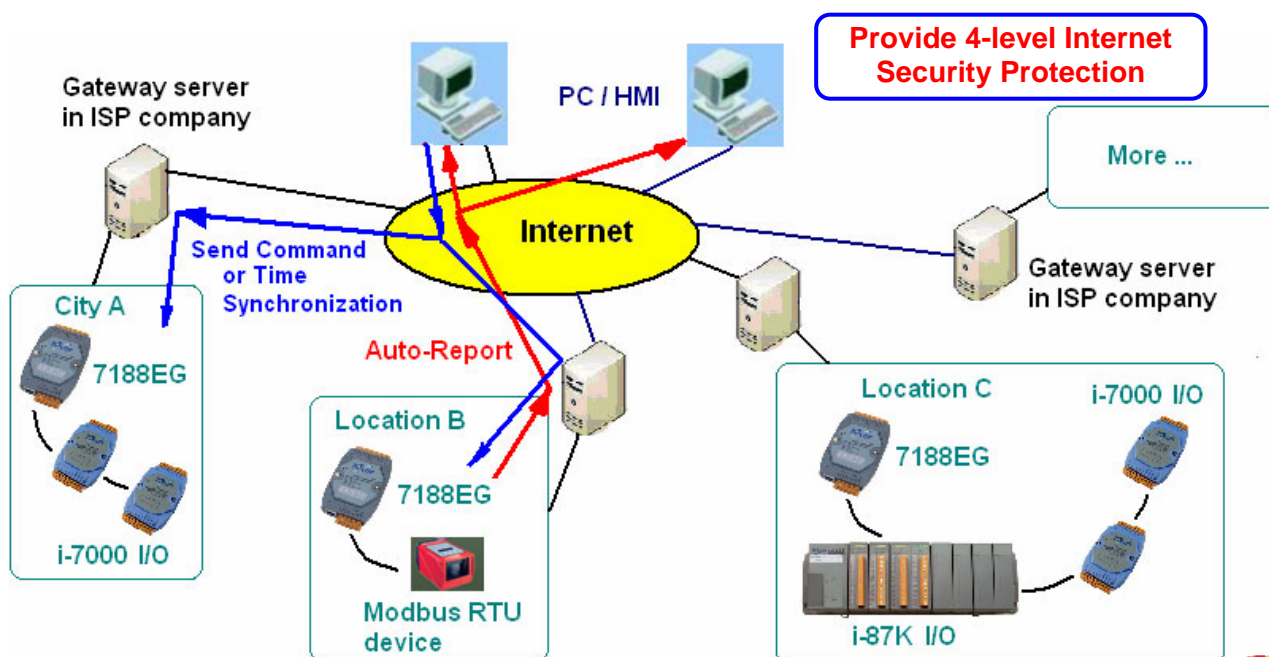
- Modbus RTU(RS232/485/422): max. 2 PC/HMI/SCADA connection
- Modbus TCP/IP: max. 4 PC/HMI/SCADA connection



● Auto-report acquisition data & control data

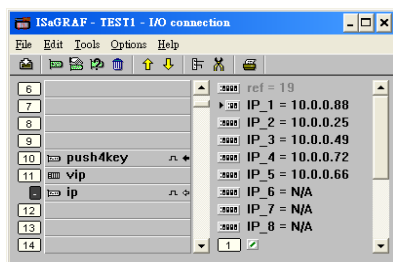
I-7188EG/EGD μ PAC can use UDP IP to auto-report acquisition data & control data to local or remote internet PC/Server.

Advantage: Every I-7188EG/EGD in the different location doesn't need a fixed IP.



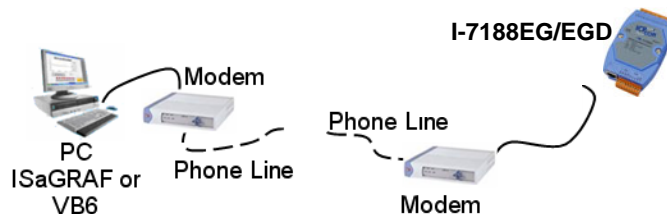
● VIP communication security

Set VIP (Very Important IP No.) for Modbus TCP/IP security.

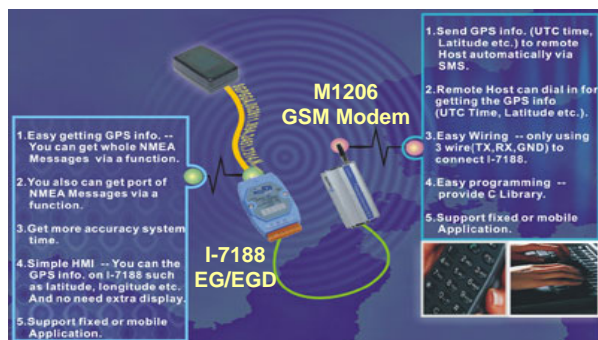


● Modem_Link download & monitor

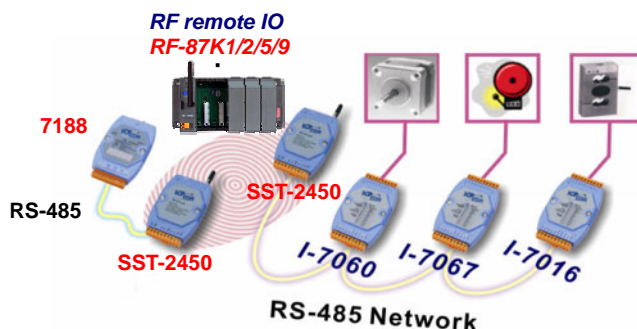
Using COM4 of X-504 to do the modem_link.











● SMS: Short Message Service



● Wireless communication



Ordering Information

Ethernet ISaGRAF μ PAC		I-7188EG	Ethernet ISaGRAF μ PAC
		I-7188EGD	Ethernet ISaGRAF μ PAC with 7-segment display
X-Board SRAM		X607 / X608	128K / 512K bytes battery backup SRAM
Application Software		ISaGRAF-256-E	ISaGRAF Workbench Software Ver.3 + one English application book
		ISaGRAF-256-C	ISaGRAF Workbench Software Ver.3 + one Chinese application book
Application Book		ISaGRAF Book-E	ISaGRAF application book (English)
		ISaGRAF Book-C	ISaGRAF application book (Traditional Chinese)
Ethernet Switch		NS-205 / NS-208	Unmanaged 5-port / 8-Port Industrial 10/100 Base-T Ethernet Switch with Plastic Case (RoHS)
LED Display		EKAN-ME122M	16x96 pixel, 64x384mm, 48W@24VDC char size: 8x6 or 16x8 pixel
		EKAN-ME124M	16x192 pixel, 64x768mm, 90W@24VDC char size: 8x6 or 16x8 pixel

Specifications of I-7188EG & I-7188EGD



Power supply	
Power requirements	10 to 30VDC (unregulated), I-7188EG:2W , I-7188EGD:3W
Protection	Built-in power protection & network protection circuit
General environment	
temperature	Operating: -25°C to +75°C , Storage : -30°C to +85°C
Humidity	5 to 95 % (non-condensed)
System	
CPU	80188 40MHz, or compatible
Watchdog timer	Yes
Real time clock	Gives hour, minute, sec, date of week, date of month, month & year (1980 to 2079)
SRAM	512Kbytes
FLASH Memory	512Kbytes, Erase unit is 64K bytes, 100,000 erase/write cycles
NVSRAM	31 bytes, battery backup, data valid up to 10 years
EEPROM	2048 bytes, retention > 100 years. 1,000,000 erase/write cycles
Display for I-7188EGD	Five 7-Seg. Led on the front. It can display message & value.
Expansion I/O bus	One optional Xxxx series I/O board can be plugged inside the I-7188EG / 7188EGD.
NET ID	Set by software, 1 to 255
Serial ports	
COM1	RS232: TXD, RXD, GND, Speed: 115200 bps max. Program downloads port.
COM2	RS485: D+, D-, 115200 bps max. Self-tuner ASIC inside
Ethernet	10M bps, NE2000 compatible, 10 BaseT. Program download port
Development software	
ISaGRAF Version 3	IEC61131-3 standard. Languages: LD, ST, FBD, SFC, IL & FC
Max. code size	I-7188EG/7188EGD accepts max. 64K byte ISaGRAF code size (Appli.x8m must < 64K)
PWM output	
Pulse Width Modulation output	All Xxxx series D/O boards support PWM output. 8 channels max. for one controller. 500Hz max. for Off=1 & On=1 ms Output square curve: Off: 1 to 32767 ms, On: 1 to 32767 ms
Counters	
Parallel D/I counter	All Xxxx series D/I boards support D/I counter. 8 ch. max. for one controller. Counter value: 32 bit 500Hz max. Min. ON & OFF width must > 1ms
Remote D/I counter	All remote I-7000 & I-87K D/I modules support counters. 100Hz max. value: 0 to 65535
Remote high speed counter	Optional i-87082:100kHz max. , 32 bit
Protocols	
Modbus serial protocol	Up to 2 COM ports (COM1 and COM3-in-X-board) can support Modbus RTU slave protocol for connecting ISaGRAF, PC/HMI/OPC Server & MMI panels.
Modbus TCP/IP protocol	Ethernet port supports Modbus TCP/IP slave protocol for connecting ISaGRAF & PC/HMI.
Remote I/O	One of COM2 (or COM3:RS485 if found) supports I-7000 I/O modules & (I-87K base + I-87K serial I/O boards) as remote I/O. Max. 64 I/O modules for one controller
Modbus master protocol	Up to 2 COM ports (COM1 ,COM2 and COM3-in-X-board) support Modbus RTU / ASCII master protocol to connect to other Modbus slave I/O devices
Fbus	Built in COM2 port to exchange data between ICP DAS's ISaGRAF controllers.
Ebus	To exchange data between ICP DAS's ISaGRAF Ethernet controllers via Ethernet port.
SMS: Short Message Service	One of (COM3:RS232 or COM4:RS232 if found) 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 modems: M1206 or GM29 (GSM 900/1800)
User defined protocol	User can write his own protocol applied at COM1, COM2 & (COM3 to COM8 if found) by serial communication function blocks.
Modem Link	Supports PC remotely download & monitor the controller through COM4 of X504.
MMICON / LCD	One of (COM3:RS232 if found) supports ICP DAS's MMICON. The MMICON is featured with a 240 x 64 dot LCD and a 4 x 4 Keyboard. User can use it to display picture, string, integer, float, and input a character, string, integer and float.
Battery backup SRAM	
	I-7188EG / 7188EGD can support up to 1024 retain variables with an X607 / X608 plug in the only expansion I/O slot. Data can be stored in X607/X608, and then PC can load these data via COM1 or Ethernet. PC can also download pre-defined data to the X607/X608 Optional: X607: 128kbytes, X608: 512kbytes