

I-8417 / 8817

ISaGRAF SoftLogic Controller



Introduction

ICP DAS I-8417 and I-8817 are SoftLogic Controllers. They support ISaGRAF which is based on the IEC61131-3 standard, to fully support all five of the PLC languages: Ladder Diagram (LD), FBD, SFC, ST, and IL plus Flow Chart (FC). ISaGRAF is a Windows programming tools and also provides powerful debugging tools including On-line Motoring and Control and also Off-line Simulation.

There are more than 300 function blocks built-in the I-8417 and I-8817 for various Industrial Applications including PID, motion, remote IO, serial communication, SMS, retain variable, scaling, ...

The I-8417 / 8817 default has 4 serial ports including 2 RS-232, 1 RS-485 and 1 RS-232/485. COM1:RS232 and COM2:RS485 both support Modbus RTU slave protocol. The PC/HMI/OPC Server and Touch panel can communicate to COM1 and COM2 easily by Modbus RTU protocol. I-8417 / 8817 also support up to 2 COM ports of Modbus RTU / ASCII master protocol to integrate with other Modbus devices. For non-Modbus devices, I-8417 / 8817 can use many serial communication function blocks to communicate to them. I-8417 / 8817 can also add extra RS232 or RS422 or RS485 ports by adding the I-8112/8114/8142/8144 multi-serial boards.

I-8417 / 8817 supports I-8K & I-87K I/O boards. There are more than 50 I/O boards available including DI, DO, AI, AO, Relay, Counter, frequency, Thermo-couple, RTD, Thermistor, Motion, ... Up to 256 local I/O points can be used in slot 0 to slot 7. More I/O can be expanded by remote I-7000 serial I/O modules and I-87K I/O boards via RS485 communication port.

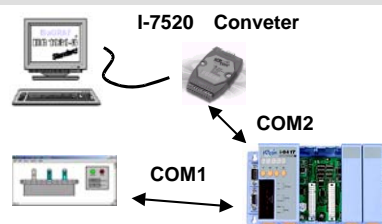
With an optional S-256 / S-512 battery backup SRAM plug in the back-plane of the controller, the I-8417 / 8817 can support up to 1024 retain variables and can use up to 244/500 K bytes retain memory for storing application data and parameter.

Ordering Information

I-8417	4 slot ISaGRAF controller	I-8817	8 slot ISaGRAF controller
I-8417-G	I-8417 gray color version	I-8817-G	I-8817 gray color version
S-256	256K bytes battery backup SRAM	S-512	512K bytes battery backup SRAM
ISaGRAF-256-E	ISaGRAF Ver.3 + one English book	ISaGRAF-256-C	ISaGRAF Ver.3 + one Chinese book
EKAN-ME122M LED Display	16x96 pixel, 64x384mm, 48W@24VDC char size: 8x6 or 16x8 pixel	EKAN-ME124M LED Display	16x192 pixel, 64x768mm, 90W@24VDC char size: 8x6 or 16x8 pixel

Features

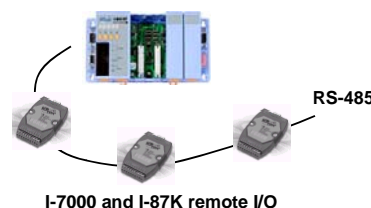
- Support Modbus RTU slave protocol. PC/HMI & Touch panel can connect to COM1 & COM2 at the same time.



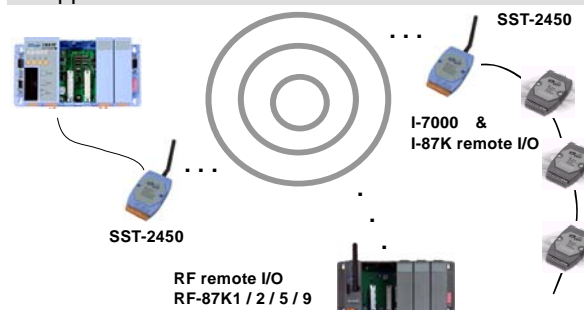
- COM2 supports Modbus RS485 network, up to 255 multi-drop, it is better not using more than 32 nodes.



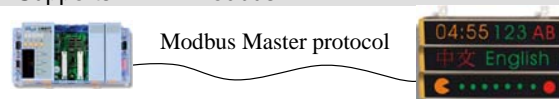
- Supports remote download program via Modem
- Supports auto-scan I/O in slot 0 to 7
- I-8K & I-87K D/I/O boards have LEDs to display I/O state.
- Supports I-7000 remote IO & I-87K expansion IO



- Supports SST-2450 wireless communication Modems



- Support up to 2 Modbus RTU / ASCII master COM ports
- Support serial port Read/Write function blocks to communicate to various serial devices
- Supports floating point calculation & String format
- Supports retain variables & battery backup memory
- SMS: supports Short Message Service when integrated with a M1206 or GM29 GSM Modem to send / receive Short Message to / from cellular phone
- Supports EKAN Modbus LED



- Software: IEC61131-3: ISaGRAF Version 3
- Supports ISaGRAF variable array, for ex, Ain[0..15],...

Specifications of I-8417 / 8817

Power supply	
Power requirements	10 to 30VDC (unregulated), 20W (when I/O slots are empty)
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
SMMI	Five 7-Seg. Led, four push buttons & three Led on the front panel. It can display message, value, input value, simulate input & output.
I/O slots	4 empty slots for I-8417, 8 empty slots for I-8817. Accept parallel & serial I/O boards
NET ID	8 dip switch to set NET ID as 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, Program downloads port.
COM3	Can be configured as RS232 or S485, Speed: 115200 bps max. RS232: TXD,RXD,RTS,CTS,GND, RS485: Data+, Data-
COM4	RS232: Full modem signals, 115200 bps max. TXD,RXD,RTS,CTS,DSR,DTR,CD,RI,GND.
Development software	
ISaGRAF Version 3	IEC61131-3 standard. Languages: LD, ST, FBD, SFC, IL & FC
Max. code size	I-8417/8817 accepts max. 64K byte ISaGRAF code size (Appli.x8m must < 64K)
Motion control	
	I-8417/8817/8437/8837 can integrate with one I-8091(2-axes) or two I-8091 to do motion control. When doing motion control, I-8437 / 8837's Ethernet communication is not available.
PWM output	
Pulse Width Modulation 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 Optional D/O boards: i-8037, 8041, 8042, 8054, 8055, 8056, 8057, 8060, 8063, 8064, 8065, 8066,8068, 8069 (Relay Output boards can not generate fast square curve)
Counters	
Parallel D/I counter	8 ch. max. for 1 controller. Counter val:32 bit. 500Hz max. Min ON & OFF width must >1ms Optional D/I boards: i-8040, 8042, 8051, 8052, 8053, 8054, 8055, 8058, 8063, 8077
Serial D/I counter	Counter input: 100Hz max. Counter value: 0 to 65535 (16 bit) Optional serial I-87K D/I boards: i-87051, 87052, 87053, 87054, 87055, 87058, 87063
Remote D/I counter	All remote I-7000 & I-87K D/I modules support counters. 100Hz max. value: 0 to 65535
High speed counter	i-87082: 100kHz max. 32 bit, i-8080: 450kHz max. 32 bit
Protocols	
Modbus serial protocol	COM1 & COM2 default supports Modbus RTU slave protocol for connecting ISaGRAF, PC/HMI/OPC Server & MMI panels.
Remote I/O	One of COM3 or COM4 supports I-7000 I/O modules & (I-87K base + I-87K serial I/O boards) as remote I/O. Max. 64 remote I/O module for one controller
Modbus master protocol	Up to 2 COM ports (COM1,COM3,COM4 and COM5 in multi serial port board) can support Modbus RTU/ASCII master protocol to connect to other Modbus slave devices
Fbus	Built in COM3 port to exchange data between ICP DAS's ISaGRAF controllers.
SMS: Short Message Service	One of 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 modems: M1206 or GM29 (GSM 900/1800)
User defined protocol	User can write his own protocol applied at COM1, COM3, COM4 (& COM5 to COM20 if multi-serial port boards are plugged) by serial communication function blocks.
Modem_Link	Supports PC remotely download & monitor the controller through a normal modem.
MMICON / LCD	One of COM3 or COM4 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.
Redundant Bus7000	Two ISaGRAF controllers can link to remote I-7000 & I-87K I/O modules at the same time. Only one controller is active to control these remote I/Os. If one is dead, the other one will take over the control of remote I/Os.
Battery backup SRAM	
	I-8417/8817 can support up to 1024 retain variables with a S256/S512 plug in the socket of the back-plane. Data can also be stored in the S256/S512, and then PC can load these data via COM1 or COM2. PC can also download pre-defined data to the S256/S512. Optional: S256: 256kbytes, S512: 512kbytes