



I-7188EG **I-7188EGD**

ISaGRAF based 7188 Series µPAC

Features

- 80188, 40 MHz CPU
- MiniOS7 Inside
- Embedded ISaGRAF Ver.3 SoftLogic (IEC 61131-3)
- Ethernet
  >10 Base-T
- Support Modbus RTU/ASCII Master
- Support Modbus RTU/TCP Slave
- Operating Temperature: -25 ~ +75 °C

Introduction

The I-7188EG Series (I-7188EG, I-7188EGD) is a palm-size PAC and includes ISaGRAF SoftLogic. It has one 10 Base-T Ethernet port, one RS-232 port and one RS-485 port. The user can choose an I/O expansion board, X-Board, to expand the COM Ports, I/Os or memories of I-7188EG.

I-7188EG supports Modbus serial protocol, Modbus TCP/IP protocol, Modbus Master protocol, Remote I/O, SMS: Short Message Service, Fbus, Ebus, modem link, MMICON/LCD and user defined protocol.

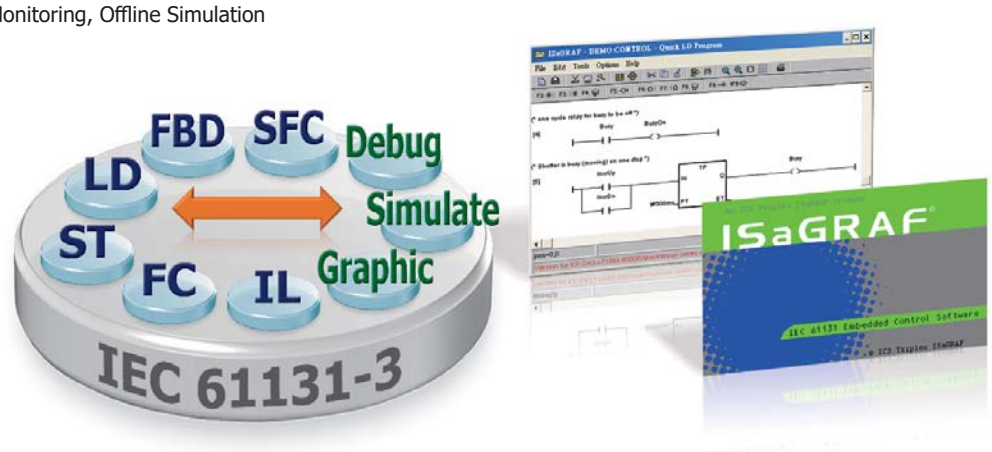
I-7188EGD is the same as I-7188EG but with 5-digit 7-segment LED display.

ISaGRAF Features

ISaGRAF is the most powerful SoftLogic package on the market, and is a PLC-like software suite application that supports IEC 61131-3 standard PLC programming languages (LD, FBD, SFC, ST, IL) and Flow Chart (FC). ISaGRAF can be used to execute applications generated by the ISaGRAF workbench on any ISaGRAF PAC.

The features of the ISaGRAF workbench Ver. 3.x include:

- IEC 61131-3 Standard Open PLC Programming Languages (LD, FBD, SFC, ST, IL) + Flow Chart (FC)
- Auto-scan I/O
- Online Debugging/Control/Monitoring, Offline Simulation
- Simple Graphic HMI
- Support eLogger HMI



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PAC Specifications

Models		I-7188EG(D)
System Software		
OS		MiniOS7 (DOS-like embedded operating system)
Development Software		
ISaGRAF Software	ISaGRAF Ver.3	IEC 61131-3 standard
	Languages	LD, ST, FBD, SFC, IL & FC
	Max. Code Size	64 KB
	Scan Time	5 ~ 100 ms for normal program 25 ~ 500 ms (or more) for complex or large program
CPU Module		
CPU		80188, 40 MHz
SRAM		512 KB
Flash		512 KB
EEPROM		2 KB
NVRAM		31 Bytes (battery backup, data valid up to 10 years)
RTC (Real Time Clock)		Provides seconds, minutes, hours, date, day of week, month, year
64-bit Hardware Serial Number		Yes, for Software Copy Protection
Watchdog Timers		Yes (0.8 second)
Communication Ports		
Ethernet		RJ-45 x 1, 10 Base-T
COM 1		RS-232 (TxD, RxD, RTS, CTS, GND), non-isolated
COM 2		RS-485 (Data+, Data-) with internal self-tuner ASIC; non-isolated
LED Indicator		
System LED		Yes
LED Display		5-digit 7-segment LED display for (D) version
Hardware Expansion		
I/O Expansion Bus		Yes, 1 (14 Pins)
Mechanical		
Dimensions (W x L x H)		72 mm x 123 mm x 33 mm
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
Protection		Power reverse polarity protection
Power Consumption		2 W; 3 W for (D) version

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ISaGRAF Specifications

Protocols (Note that certain protocols require optional devices)	
NET ID	1 ~ 255, User-assigned by software
Modbus RTU/ASCII Master Protocol	A max. of 2 ports: COM1 ~ COM3 (*). (To connect to other Modbus Slave devices) A max. of Max. Mbus_xxx Function Block amount for 2 ports: 64.
Modbus RTU Slave Protocol	A max. of 2 ports: COM1, one of COM2 or COM3 (*). (For connecting ISaGRAF, PC/HMI/OPC Server and HMI panels.)
Modbus TCP/IP Slave Protocol	Ethernet port supports Modbus TCP/IP Slave protocol for connecting ISaGRAF & PC/HM up to 4 connections.
User-defined Protocol	Custom protocols can be applied at COM1, COM2 & COM3 ~ COM8 (*) using Serial communication function blocks.
Remote I/O	One of COM2 or COM3: RS-485 (*) 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. A max. of 64 I-7000/87K remote I/O modules can connect to one PAC.
Fbus	Built-in COM2 Port to exchange data between ICP DAS's ISaGRAF PACs.
Ebus	Used to exchange data between ICP DAS ISaGRAF Ethernet PACs via the Ethernet port.
SMS: Short Message Service	One COM port (one of COM1 or COM3 or COM4) (*) can link to a GSM modem to support SMS. The user can request data or control the controller via a cellular phone. The controller can also send data and alarms to the user's cellular phone. Optional GSM Modem: GTM-201-RS232 (850/900/1800/1900 GSM/GPRS External Modem)
Modem Link	Supports PC to remotely download & monitor the controller through COM4 of X504. (*)
MMICON/LCD	The COM3: RS-232 (*)supports the ICP DAS 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.
Optional I/O Functions (Refer to the ISaGRAF PAC I/O Selection Guide for I/O Module list)	
PWM Output	
Pulse Width Modulation Output	All X-board series DO boards support PWM output. Support max. 8-ch for one PAC; Max. frequency: 500 Hz max. for OFF = 1 & ON = 1 ms Output square wave: OFF: 1 ~ 32767 ms, ON: 1 ~ 32767 ms
Counters	
Parallel DI Counter	All X-board series DI boards support DI counter. Support max. 8-ch for one PAC ; Max. count/frequency: 32-bit, 500 Hz ; Min. pulse width > 1 ms
Remote DI Counter	All remote I-7000 & I-87K DI modules support counters. Max. count/frequency: 16-bit (0~65535), 100 Hz.
Remote High Speed Counter	Max. count/frequency for I-87082: 32-bit, 100 kHz
SRAM Expansion	
Battery Backup SRAM	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. PC can also download pre-defined data to the X607/X608. (for retain variables) Optional: X607: 128 KB, X608: 512 KB
*** Note: The COM3 ~ COM8 are located in the optional X-board series if it is installed inside the I-7188EG(D).**	

Ordering Information

I-7188EG CR (blue)	ISaGRAF based µPAC with 10M Ethernet (RoHS)
I-7188EGD CR (blue)	I-7188EG with display (RoHS)
I-7188EG-G CR (gray)	ISaGRAF based µPAC with 10M Ethernet (RoHS)
I-7188EGD-G CR (gray)	I-7188EG-G with display (RoHS)

Related Products

ISaGRAF Development Software	
ISaGRAF-256	ISaGRAF Workbench Software Ver.3 (256 I/O Tags) with one USB Dongle

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