Classification	ISaGRAF Englis	sh FAQ-05	55				
Author	Chun Tsai	Version	1.0.0	Date	Mar. 2007	Page	1 / 7

## How to connect I-7018Z to get 6 channels of 4 to 20 mA input and 4 channles of Thermo-couple temperature input? And also display the value on PC by VB 6.0 program?

The ISaGRAF demo project name is "demo\_72". It can run in the I-7188EG / 7186EG. If user want to run in I-8xx7 or XP-8x37-CE6, please set the "com\_port" parameter of "Bus7000b" in the IO connection window to COM3 and then re-compile the project.

"demo\_72.pia" and VB 6.0 project - "Demo\_4" reside at https://www.icpdas.com/en/faq/index.php?kind=280#751 – FAQ-055

I-7188EG 's COM2:RS-485 can connect I-7000 or I-87K/4/5/8/9 expansion base plus I-87xxx I/O boards in it. One **I-7188EG** can connect max. **64** pcs. of I-7000 modules (or I-87xxx I/O boards, the total amount of "I-7000 + I-87xxx" is up to 64 pcs.). To use **I-8xx7's** COM3:RS-485 to connect I-7000 + I-87xxx is the same as I-7188EG, the total amount is also **64** pcs. While max. **255** pcs. for using **XP-8x37-CE6** COM3:RS-485 to connect I-7000 + I-87xxx .

The more RS-485 I/O modules connected, the more I/O scan time will be. For example, if setting baudrate as 9600 bps (Bit Per Second), one RS-485 D/I & D/O module will consume about 20 to 40 millisecond to scan its I/O channels. If connecting RS-485 A/I & A/O module, one will consume about 40 to 60 ms (The I/O scan time of the remote RS-485 I/O module depends on the module's type and function. If there are more than one I/O type in the module, the time consumed will be longer than the above value.

For example, the I-7050D is a 7-Ch digital Input plus 8-ch digital output module, it will consume more than 20 to 40 ms). If connecting 20 pcs. of D/I/O modules, the appromate I/O scan time of all channels in these I/O modules will be about 0.4 to 0.8 second. If connecting 20 pcs. of A/I/O modules, the I/O scan time is about 0.8 to 1.2 second. To have better (shorter) remote I/O scan time, it is **recommended not to connect more than 24 pcs**. of I/O modules in the I-7188EG/XG and I-8xx7.

Classification	ISaGRAF Englis	ISaGRAF English FAQ-055							
Author	Chun Tsai	Version	1.0.0	Date	Mar. 2007	Page	2 / 7		

## How to test this demo?

- 1. To configure I-7018Z and I-87018z, please install **DCON utility (Version should be 4.4.3 or later version)** in your PC. The new released DCON Utility can be found at <a href="http://www.icpdas.com/en/product/guide+Software+Utility\_Driver+DCON\_Utility\_Pro">http://www.icpdas.com/en/product/guide+Software+Utility\_Driver+DCON\_Utility\_Pro</a>
- 2. Do initial configuration in I-7018Z, refer to step (1) to (4) in Section 6.1 of the ISaGRAF user manual. Set I-7018Z 's Address as 1, baud rate as 9600, Format as "2's compliment", Checksum disable. And also set Ch.1 to Ch.6 type as "[1A]: 0 ~ 20 mA", while Ch.7 to Ch.10 type as "[0F]: T/C K-Type". If initial setting is finished, switch the "Dip Switch" on the back of I-7018Z to "Normal" and recycle its power.
- Set the I-7188EG's IP as 192.168.1.3 (refer to Appendix B of the ISaGRAF user manual), NET-ID as 1. Then power OFF the I-7188EG, connecting its COM2 to the I-7018Z. Then power up I-7188EG and I-7018Z. (To connect this I-7188EG well in the local network, PC 's IP should be in the same domain as 192.168.1.x. For example, setting PC 's IP as 192.168.1.2, Mask=255.255.255.0)
- 4. PC run ISaGRAF to download "demo\_72" project to the I-7188EG via ethernet. Then open the Ladder program window in the ISaGRAF to check if I-7018Z is well connected.

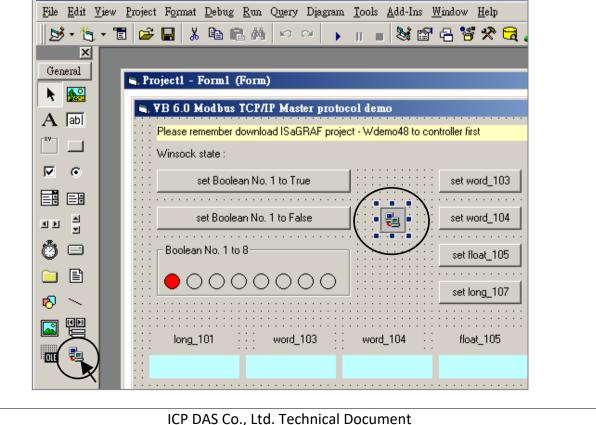
connecting Addr=1 : i-7018z, DCON should set Ch1. to 6 as [1A] 0 ~ 20mA, Ch.7 to ch.10 as [F] ThermoCoul   0K1   1   ADR_   1   ADR_   1   ADR_   1   ADR_   16#1A   TYP1_   16#1A   TYP2_   16#1A   TYP3_   16#1A   TYP4_   16#1A   TYP5_   16#1A   TYP5_   16#1A   16#1A   TYP5_   16#100F   16#100F   TYP8_   16#100F   TYP8_   16#100F   TYP8_   16#100F   TYP8_   16#100F   TYP9_   16#100F   TYP9_   16#100F   TYP9_   16#100F   TYP9_   16#100F   TYP9_   16#100F   TYP10	e 🖬 🕹	🔍 🍳 🖽 🏢						
	connecting A	1 16#1A 16#1A 16#1A 16#1A 16#1A 16#100F 16#100F 16#100F	en <sup>1_70</sup> ADR_ TYP1_ TYP2_ TYP3_ TYP4_ TYP5_ TYP5_ TYP5_ TYP5_ TYP5_	18Z Q_ NI1_ NI2_ NI3_ NI4_ NI5_ NI6_ NI7_ NI8_	Ain[0] -0 Ain[1] -980 Ain[2] -2785 Ain[3] -4354 Ain[4] -5208 Ain[5] -6026 Temp[0] -999990 Temp[1] -999990 Temp[2] -999990 Temp[3]	if "OK this i-7	1" is True, it me 7018z well	
os=6,14	os=6,14							

Classification	ISaGRAF Eng	lish FAQ-0	55				
Author	Chun Tsai	Version	1.0.0	Date	Mar. 2007	Page	3 / 7
5. Then please re https://www.		—	' in your PC. It i php?kind=280				
			project can be php?kind=280				
If PC can not link error message. If message displaye	the I-7188EG	can not cor					
You may click on also enter a valu	_					_15" value by	y 1. You may
🖷 ¥B 6.0 Demo_	4 Modbus TCP/I	P Master proto	ocol demo				
ftp://ftp.icpdas.com utility version since 4 20 mA , Ch.7 to 10 a ftp://ftp.icpdas.com www.icpdas.com - F Winsock state : For testing Write	/pub/cd/8000cd/nap (4.3 to configure 1-70 is [F] : T/C K-type. N /pub/cd/8000cd/nap AQ - Software - ISaG Controller connected	bdos/isagraf/vb_ 118z 's addr=1 , l ew DCON utility bdos/driver/dcon RAF - 051 , The I well	0/demo/. VB_6 Den demo/. ICP DAS tech baud=9600, format = can be download at _utility/"setup". If yr re is one another VB_ 2-bit) and write long in	nnical suppor 2's complime 5 demo prog teger value b	nt , checksum disab st VB.net 2005 demo ram at 052. <b>i-7(</b>	le, Ch.1 to 6 Type o program, please 018z on-lin	as [1A]: 0 ~ visit
	$\backslash$	float_17	8.765E-15		et float_17		
- i-7018z Ch.1 to C Ch.1 4	Ch.6 , Type code = [1, Ch.2 1622	A]: 0 ~ 20 mA , / Ch.3 3323	Analog value = 0 ~ +3 Ch.4 4608	2767 , Read Ch.5 5600	Word_1 to Word_6 Ch.6 6352	(signed 16-bit)	
- i-7018z Ch.7 to C Ch.7 999990	(	IF) : T/C K-type , Ch.8 9990	unit is 0.01 degree , F Ch.9 2450	(	, Long_9 , Long_11 %.10 99990	, Long_13	1
	value of 999990	) means Thermo	Couple sensor broken	line			
Communication sta	ite : Receive 10 byte	BS					
_		ICP DAS	Co., Ltd. Techn	ical Docu	iment		

Classification	ISaGRAF Englis	ISaGRAF English FAQ-055						
Author	Chun Tsai	Version	1.0.0	Date	Mar. 2007	Page	4 / 7	

At designing time of the VB 6.0 program, please add "Winsock control" to your VB 6.0 project as below. Then ethernet operation will be possible in the project.

🐅 Project1 - Microsoft Visual Basic [design] File Edit View Project Format Debug Run Query Diagra Add Form 🔊 • 🐂 • T Components X 🏹 Add MD<u>I</u> Form X Controls | Designers | Insertable Objects | 🮎 Add <u>M</u>odule General Microsoft Shell Controls And Automation 🦄 Add <u>C</u>lass Module Microsoft SysInfo Control 6.0 N 🕵 🙀 Add User Control ոժ Microsoft Tabbed Dialog Control 6.0 (SP6) 🔄 Add Property Page Microsoft Windows Common Controls 5.0 (SP2) A 🔤 Microsoft Windows Common Controls 6.0 (SP6) 🏠 Add User Document Microsoft Windows Common Controls-2 5.0 (SP2) ð - 🖽 🍓 Add WebClass htMicrosoft Windows Common Controls-2 6.0 (SPé Add Data Report Microsoft Windows Common Controls-3 6.0  $\mathbf{G}$ Add DHTML Page Microsoft Winsock Control 6.0 (SP6) MITCTIZ ACTIVEX CONTROL MODULE Add Data Environment ModView File Transfer Control module <u>A</u>dd File... Ctrl+D Сd MS Video Control 1.0 Type Library ٩₽ Browse .... MSFlexGrid Wizard Remove Form1.frm ы Selected Items Only ng l or 🙋 References.. Active Setup Control Library B ιøł Ctrl+T Components. Location: C:\WINDOWS\system32\asctrls.ocx h l s ins ø Project1 Properties. ed 뗃 SCRUIOSINS 確定 取消 套用(A) sckError 🙀 Project1 - Microsoft Visual Basic [design]



Classification	ISaGRAF Engli								
Author	Chun Tsai	Page	5 / 7						
ISACRAE Project	architactura								
ISaGRAF Project	architecture.								
	- ISaGRAF - D	емо_72 - р	TOgrams		_ 🗆	×			
	<u>F</u> ile <u>M</u> ake <u>P</u> roje	ct <u>T</u> ools D	e <u>b</u> ug <u>O</u> ptions <u>H</u> e	lp					
	🖹 🖬 😵 🕮	0 🗈 🕯	) 🔻 🗶 🕪	<b>™ ∛</b> ∢	🞗 🛄 🐉				
	Begin:	💌 ST1							
		н LD1							
	Begin: ST1 (Structured Text)								
We use "Variabl	e array" in this d	emo proie	ect. Please refer	to secti	on 2.6 of the l	SaGRAF u	ser manual or		
						545.0 m u			

Variables :

Name	Туре	Attribute	Description
INIT	Boolean	Internl	Set initial value as True
OK1	Boolean	Internl	Communication state of I-7018Z, addr as 31 (Hex. is 1F)
M1	Boolean	Internal	For testing by VB 6.0 , addr as 21 (Hex. is 15)
ТМР	Boolean	Internal	Internal using
	Integor	Internal	Variable array, Dim as 6, <b>addr as 1</b>
Ain[05]	Integer	internal	To get the input value of I-7018Z 's Ch.1 to Ch.6
Tomp[0, 2]	Integor	Internal	Variable array, Dim as 4, <b>addr as 7</b>
Temp[03]	Integer	mternar	To get the temperature input of I-7018Z 's Ch.7 to Ch.10
CNT1	Integer	Internal	For testing by VB 6.0, addr as 15 (Hex. is F)
Float 17	Integer	REAL	For testing by VB 6.0, addr as 17 (Hex. is 11)
riuat_17	Integer	REAL	Set initial value as 1.02345

Classification	ISaGRAF English FAQ-055									
Author	Chun Tsai	Version	1.0.0	Date	Mar. 2007	Page	6 / 7			
Tprogram – ST1										
if INIT ther	ו									
INIT :=	False ;									
	in[05] 's netwo declaration in th				al addr. 1 sho	uld be assi	gned when			
TMP := S	_MB_ADR( 1 <i>,</i> 6	,0) ;(*	the 3rd param	ieter 0 m	eans setting a	as continu	ous addr. *)			
(*Configure Te	_MB_ADR( 1 , 6 mp[03] 's netw declaration in th	vork addr	as 7, 9, 11, 13,	the initia	-					
(*Configure Te doing variable	emp[03] 's netw	vork addr ne ISaGRA	as 7, 9, 11, 13, F dictionary wi	the initia ndow *)	ıl addr. 7 shou	ıld be assi	gned when			
(*Configure Te doing variable	mp[03] 's netw declaration in th	vork addr ne ISaGRA	as 7, 9, 11, 13, F dictionary wi	the initia ndow *)	ıl addr. 7 shou	ıld be assi	gned when			

Classification	ISaGRAF Englis	ISaGRAF English FAQ-055						
Author	Chun Tsai	Version	1.0.0	Date	Mar. 2007	Page	7 / 7	

## LD program – LD1

The "TYP1\_" to "TYP6\_" parameter of the I-7018Z block should be set as the same type code value in the DCON Utility (Here we use [1A] 0 ~ 20 mA in this demo). And "TYP7\_" to "TYP10\_" set as 16#100F (This demo set [0F] T/C K-Type in the DCON utility). Because we want to convert the temperature value to Celsius degree, so we use 16#100F here (unit is 0.01 degree). (If applying as Degree Fahrenheit, please set as 16#200F). If any converted value of the Temp[0] to Temp[3] returns 999990, it means the related channel's temperature input sensor is break.

If the I-7018Z is connected well, OK1 will be True.

