User Guide for I-87017DW, I-87017ZW and I-87019ZW Cards

I-87017DW, I-87017ZW and I-87019ZW are released about Aug. 2011.

The following ICP DAS ISaGRAF controllers (PAC) support I-87017DW, I-87017ZW and I-87019ZW.

- I-8417/8817/8437/8837/8437-80/8837-80: for remote I/O unit only (ISaGRAF driver Ver.4.15 or later)
- I-7188EG/EGD: for remote I/O unit only (ISaGRAF driver Ver.3.15 or later)
- I-7188XG/XGD: for remote I/O unit only (ISaGRAF driver Ver.3.14 or later)
- uPAC-7186EG/EGD: for remote I/O unit only (ISaGRAF driver Ver.1.14 or later)
- iPAC-8447 / 8847 (ISaGRAF driver Ver.1.10 or later)
- WinPAC-8147 / 8447 / 8847 , WinPAC-8146 / 8446 / 8846 (ISaGRAF driver Ver.1.37 or later)
- XP-8xx7-CE6/8xx6-CE6 (ISaGRAF driver Ver.1.17 or later)
- VP-25W7/23W7 , VP-25W6/23W6 (ISaGRAF driver Ver.1.29 or later)

I-87017DW can be used as an “8-Ch. Differential” or “16-Ch. Single-Ended” Analog Input,
I-87017DW detail information: http://www.icpdas.com/products/Remote_IO/i-87k/i-87017dw.htm or www.icpdas.com > Products > 8K & 87K I/O Modules > Go To I-87K Series > I-87017DW

I-87017ZW can be used as a “10-Ch. Differential” or “20-Ch. Single-Ended” Analog Input,
I-87017ZW detail information: http://www.icpdas.com.tw/product/solutions/remote_io/rs-485/i-8k&i-87k/i-87017zw.html or www.icpdas.com > Products > 8K & 87K I/O Modules > Go To I-87K Series > I-87017ZW

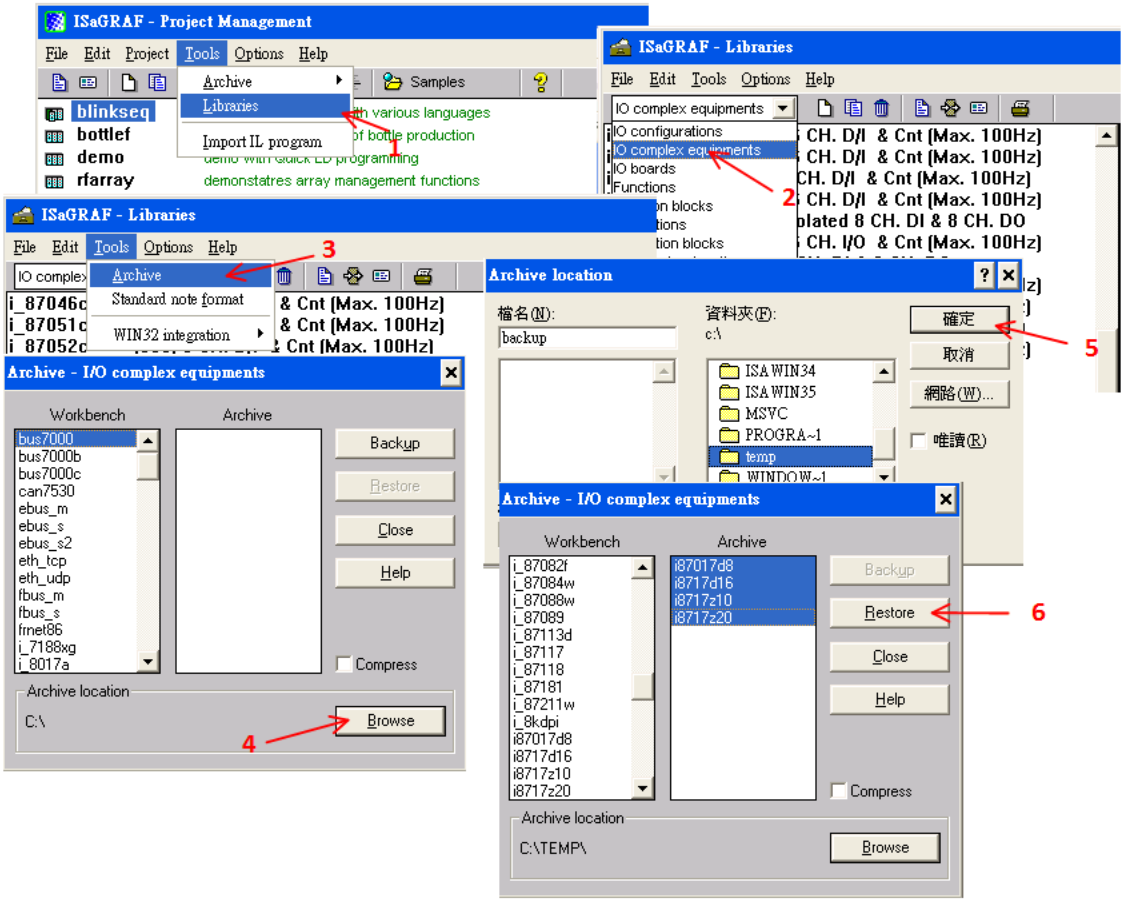
I-87019ZW can be used as a “10-Ch. universal” Analog Input,
I-87019ZW detail information: http://www.icpdas.com.tw/product/solutions/remote_io/rs-485/i-8k&i-87k/i-87019zw.html or www.icpdas.com > Products > 8K & 87K I/O Modules > Go To I-87K Series > I-87019ZW

If you cannot find “i87017d8”, “i8717d16”, “i8717z10” and “i8717z20” in the window “IO connection” > “equipments” of your PC/ISaGRAF, please get the “i87017d8.xia”, “i8717d16.xia”, “i8717z10.xia”, “i8717z10.xia”, “i_87019z.bia”, “i87017d8.fia”, “i8717d16.fia”, “i8717z10.fia”, “i8717z10.fia” and “i_87019z.fia” files from the following direction:

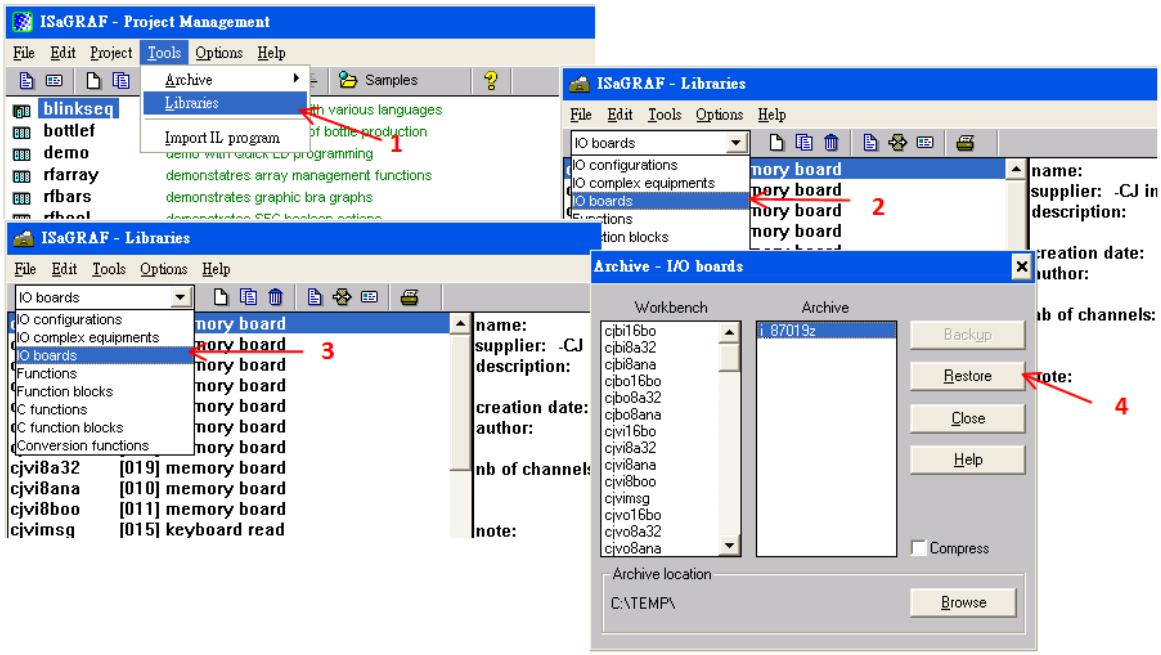
- ftp://ftp.icpdas.com/pub/cd/wincon_isagraf/napdos/isagraf/ark/
- www.icpdas.com > ISaGRAF SoftLogic PAC > FAQ > Englich > FAQ 148 (http://www.icpdas.com/faq/isagraf.htm > FAQ148)
- PAC CD-ROM:\napdos\isagraf\ark\

Next, restore “i87017d8.xia”, “i8717d16.xia”, “i8717z10.xia”, “i8717z10.xia”, “i_87019z.bia”, “i87017d8.fia”, “i8717d16.fia”, “i8717z10.fia”, “i8717z10.fia” and “i_87019z.fia” into the PC / ISaGRAF as the steps shown in the next page.

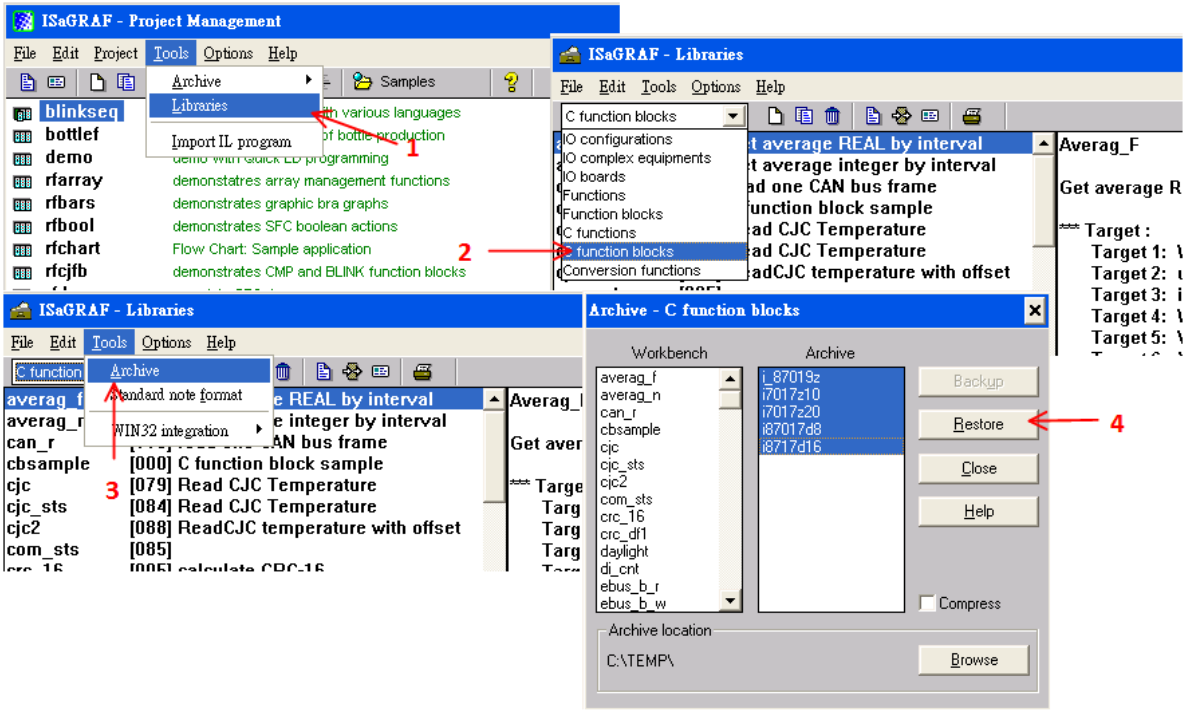
Restore the “IO complex equipments” - “i87017d8.xia”, “i8717d16.xia”, “i8717z10.xia” and “i8717z10.xia” to the PC / ISaGRAF.



Restore the “IO Boards” - “i_87019z.bia” to the PC / ISaGRAF.

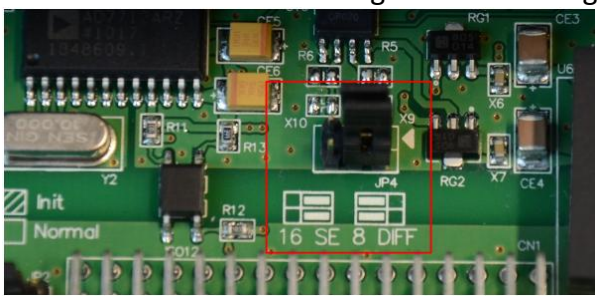


Restore the “C- function blocks” - “i87017d8.fia”, “i8717d16.fia”, “i8717z10.fia”, “i8717z10.fia” and “i_87019z.fia” to the PC / ISaGRAF.



1.1. I-87017DW User Guide

I-87017DW can be set as an 8 Ch. Differential or 16 Ch. Single-Ended Analog Input by jumper.



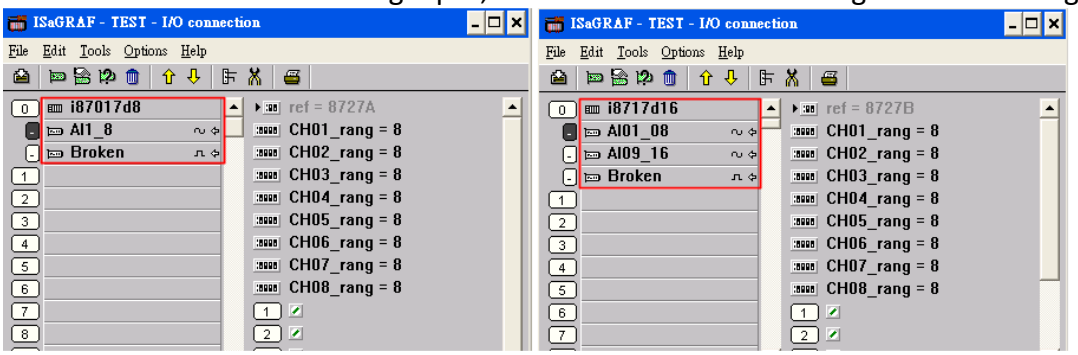
Each channel of I-87017DW can set the individual range type, listed as below:

Range Type	Physical Value	I-87017DW Analog Input value (Decimal)			8 CH. Differential	16 CH. Single-Ended
		- 32768	0	+32767		
8	± 10 V	-10 V	0 V	+10 V	Support	Support
9	± 5 V	-5 V	0 V	+5 V	Support	Support
A	± 1 V	-1 V	0 V	+1 V	Support	Support
B	± 500 mV	-500 mV	0 V	+500 mV	Support	Support
C	± 150 mV	-150 mV	0 V	+150 mV	Support	Support
7	4 ~ 20 mA		4 mA	20 mA	Support	Not support
D	± 20mA	- 20mA	0 mA	20mA	Support	Not support
1A	0 ~ 20 mA		0 mA	20mA	Support	Not support

NOTE: Single-Ended Analog Input cannot measure current input.

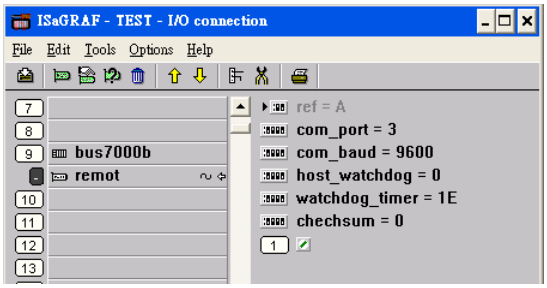
Use the I-87017DW in the Slot 0~7 of the PAC (ISaGRAF iP/WP/XP/VP PAC):

In the “IO connection” window, connect the related slot number to “i87017d8” or “i8717d16”. “i87017d8” is for 8 Ch. Differential Analog Input; “i8717d16” is for 16 Ch. Single-Ended Analog Input.



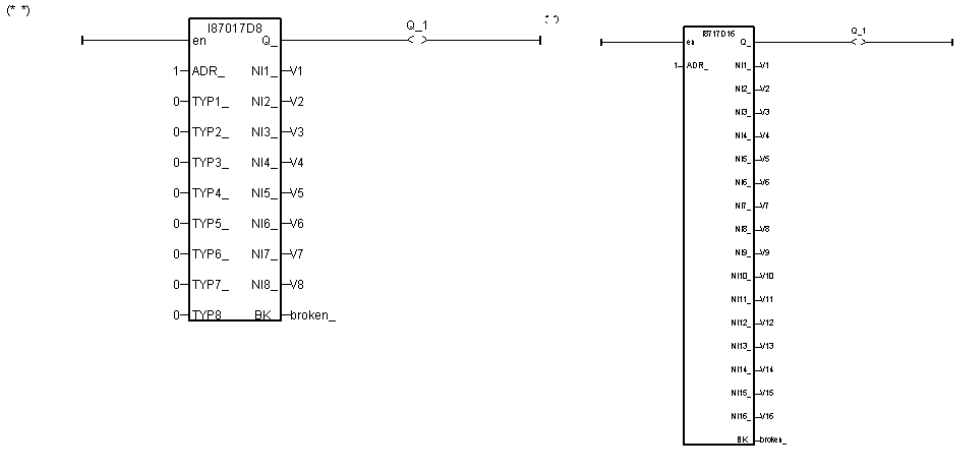
Use the I-87017DW as a Remote I/O:

Plug on the I-87K4/5/8/9 or RU-87P4/8 to use it as a RS-485 remote I/O. Please run the DCON Utility on PC to configure the I-87017DW’s Address (NET-ID), Baud-rate, range mode of channels and other settings. In “IO connection” window, connect to “bus7000b” and set the com_port, com_baud and other settings.



Then, write an ISaGRAF Ladder program as below to use it.

“i87017d8” is for 8 Ch. Differential Analog Input; “i8717d16” is for 16 Ch. Single-Ended Analog Input.



ADR_ : the Address (NET-ID) of the Remote I/O.

TYP1~TYP8 : set the Range Type. “i8717d16” cannot measure the current input, so no Range Type setting.

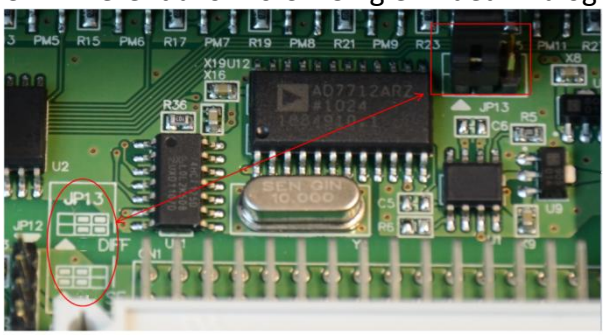
16#7 : 4mA ---> 20mA

16#1A : 0mA ---> 20mA

16#0 : means other Range (+/- 10V,+/- 5V,+/- 1V,+/- 500mV,+/- 150mV,+/- 20mA)

1.2. I-87017ZW User Guide

I-87017ZW can be set as a 10 Ch. Differential or 20 Ch. Single-Ended Analog Input by jumper.



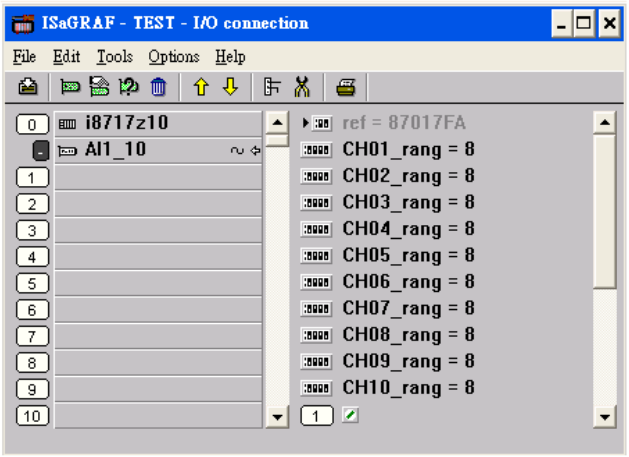
Each channel of I-87017ZW can set the individual range type, listed as below:

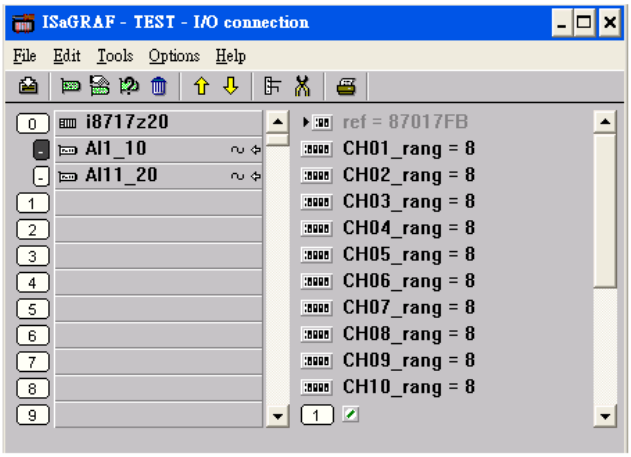
Range Type	Physical Value	I-87017ZW Analog Input value (Decimal)			10 CH. Differential	20 CH. Single-Ended
		- 32768	0	+32767		
8	± 10 V	-10 V	0 V	+10 V	Support	Support
9	± 5 V	-5 V	0 V	+5 V	Support	Support
A	± 1 V	-1 V	0 V	+1 V	Support	Support
B	± 500 mV	-500 mV	0 V	+500 mV	Support	Support
C	± 150 mV	-150 mV	0 V	+150 mV	Support	Support
7	4 ~ 20 mA		4 mA	20 mA	Support	Not Support
D	± 20mA	- 20mA	0 mA	20mA	Support	Not Support
1A	0 ~ 20 mA		0 mA	20mA	Support	Not Support

NOTE: Single-Ended Analog Input cannot measure current input.

Use the I-87017ZW in the Slot 0~7 of the PAC (ISaGRAF iP/WP/XP/VP PAC):

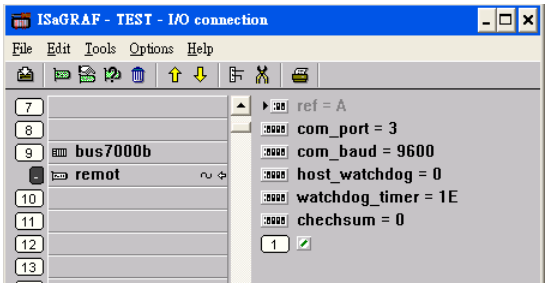
In the "IO connection" window, connect the related slot number to "i8717z10" or "i8717z20". "i8717z10" is for 10 Ch. Differential Analog Input; "i8717z20" is for 20 Ch. Single-Ended Analog Input.



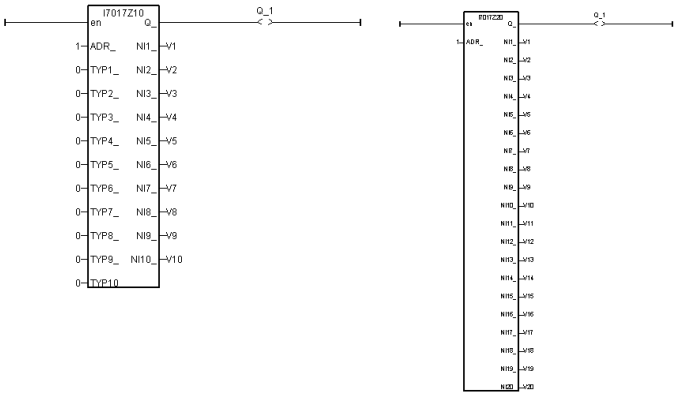


Use the I-87017ZW as a Remote I/O:

Plug on the I-87K4/5/8/9 or RU-87P4/8 to use it as a RS-485 remote I/O. Please run the DCON Utility on PC to configure the I-87017ZW's Address (NET-ID), Baud-rate, range mode of channels and other settings. In "IO connection" window, connect to "bus7000b" and set the com_port, com_baud and other settings.



Then, write an ISaGRAF Ladder program as below to use it.
"i7017z10" is for 10 Ch. Differential Analog Input; "i7017z20" is for 20 Ch. Single-Ended Analog Input.



ADR_ : the Address (NET-ID) of the Remote I/O.
TYP1~TYP10 : set the Range Type. "i7017z20" cannot measure the current input, so no Range setting.
16#7 : 4mA ---> 20mA
16#1A : 0mA ---> 20mA
16#0 : other Range (+/- 10V,+/- 5V,+/- 1V,+/- 500mV,+/- 150mV,+/- 20mA)

1.3. I-87019ZW User Guide

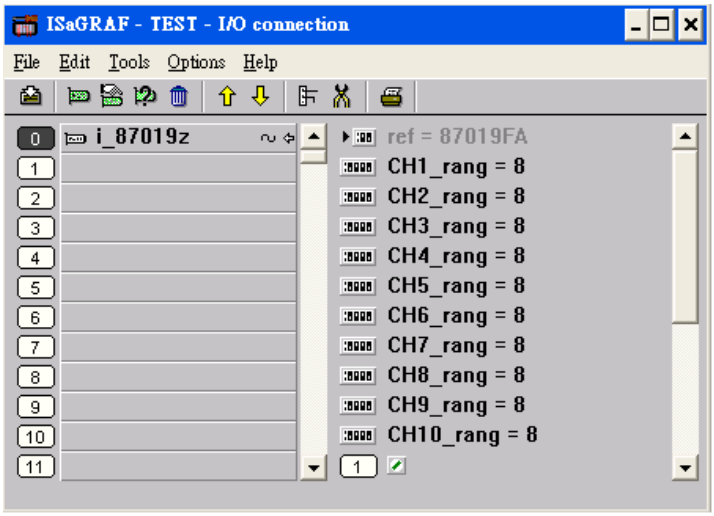
Each channel of I-87019ZW can set the individual range type, listed as below:

Range Type	Physical Value	I-87019ZW Analog Input value (Decimal)		
		- 32768	0	+32767
0	± 15 mV	-15 mV	0 V	+15 mV
1	± 50 mV	-50 mV	0 V	+50 mV
2	± 100 mV	-100 mV	0 V	+100 mV
3	± 500 mV	-500 mV	0 V	+500 mV
4	± 1 V	-1 V	0 V	+1 V
5	± 2.5 V	-2.5 V	0 V	+2.5 V
8	± 10 V	-10 V	0 V	+10 V
9	± 5 V	-5 V	0 V	+5 V
A	± 1 V	-1 V	0 V	+1 V
B	± 500 mV	-500 mV	0 V	+500 mV
C	± 150 mV	-150 mV	0 V	+150 mV
7	4 ~ 20 mA		4 mA	20 mA
6、D	± 20mA	- 20mA	0 mA	20mA
1A	0 ~ 20 mA		0 mA	20mA

Thermocouple				
E	J-Type	-210 ℃	0℃	760 ℃
		-9054	0	32767
F	K-Type	-270 ℃	0℃	1372 ℃
		-6448	0	32767
10	T-Type	-270 ℃	0℃	400 ℃
		-22118	0	32767
11	E-Type	-270 ℃	0℃	1000 ℃
		-8847	0	32767
12	R-Type		0℃	1768 ℃
			0	32767
13	S-Type		0℃	1768 ℃
			0	32767
14	B-Type		0℃	1820 ℃
			0	32767
15	N-Type	-270 ℃	0℃	1300 ℃
		-6805	0	32767
16	C-Type		0℃	2320 ℃
			0	32767
17	L-Type	-200 ℃	0℃	800 ℃
		-8192	0	32767
18	M-Type	-200 ℃	0℃	100 ℃
		-32768	0	16384
19	L-Type (DIN43710)	-200 ℃	0 ℃	900 ℃
		-7281	0	32767

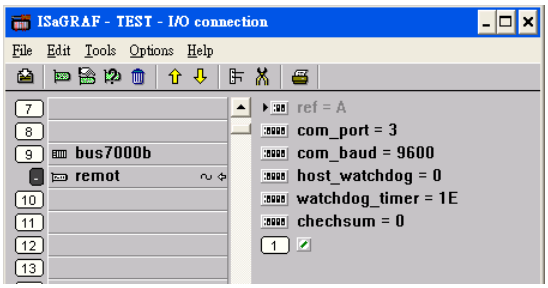
Use the I-87019ZW in the Slot 0~7 of the PAC (ISaGRAF iP/WP/XP/VP PAC):

In the “IO connection” window, connect the related slot number to “i_87019z”.

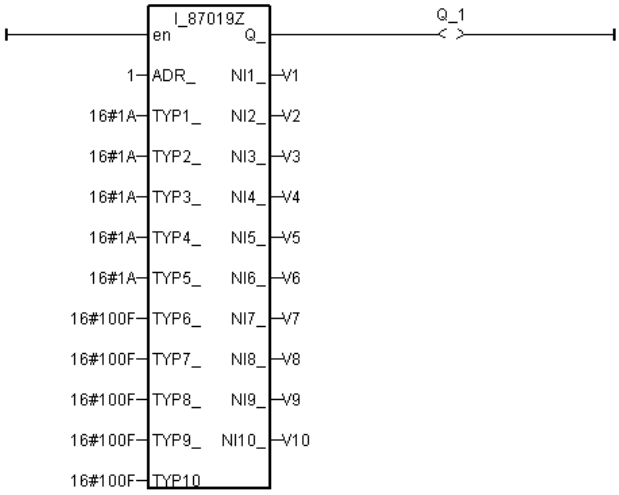


Use the I-87019ZW as a Remote I/O:

Plug on the I-87K4/5/8/9 or RU-87P4/8 to use it as a RS-485 remote I/O. Please run the DCON Utility on PC to configure the I-87019ZW's Address (NET-ID), Baud-rate, range mode of channels and other settings. In "IO connection" window, connect to "bus7000b" and set the com_port, com_baud and other settings.



Then, write an ISaGRAF Ladder program as below to use it. "i_87019z" is for I-87019ZW 10 Ch. Universal Analog Input.



ADR_ : the Address (NET-ID) of the Remote I/O.

TYP1~TYP10 : set the Range Type. Please refer to the I-87019ZW Range List.

For detail application, please refer to ISaGRAF FAQ-061 : http://www.icpdas.com/faq/isagraf/061_c.htm