# 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/en/product/I-87017DW-G
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/en/product/I-87017ZW-G

I-87019ZW can be used as a “10-Ch. universal” Analog Input,
I-87019ZW detail information: http://www.icpdas.com/en/product/I-87019ZW-G_S

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:

- https://www.icpdas.com/en/download/file.php?num=962 (io_lib.zip)
- https://www.icpdas.com/en/faq/index.php?kind=280#751 > Englich > FAQ 148
- Please visit the webpage to download " io_lib.zip " and install I/O libraries by clicking "setup.exe" after unzip the file.

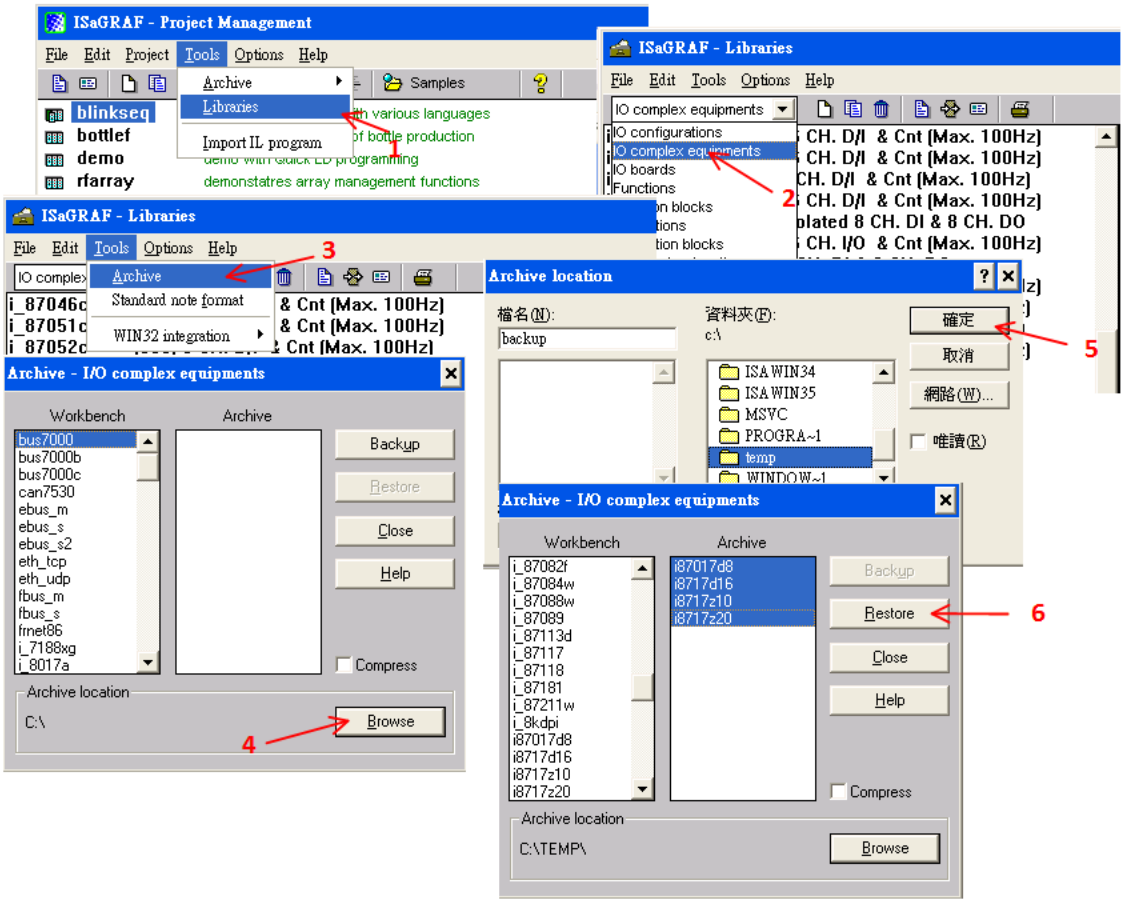
http://www.icpdas.com/en/download/show.php?num=368&nation=US&kind1=&model=&kw=isagraf

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.

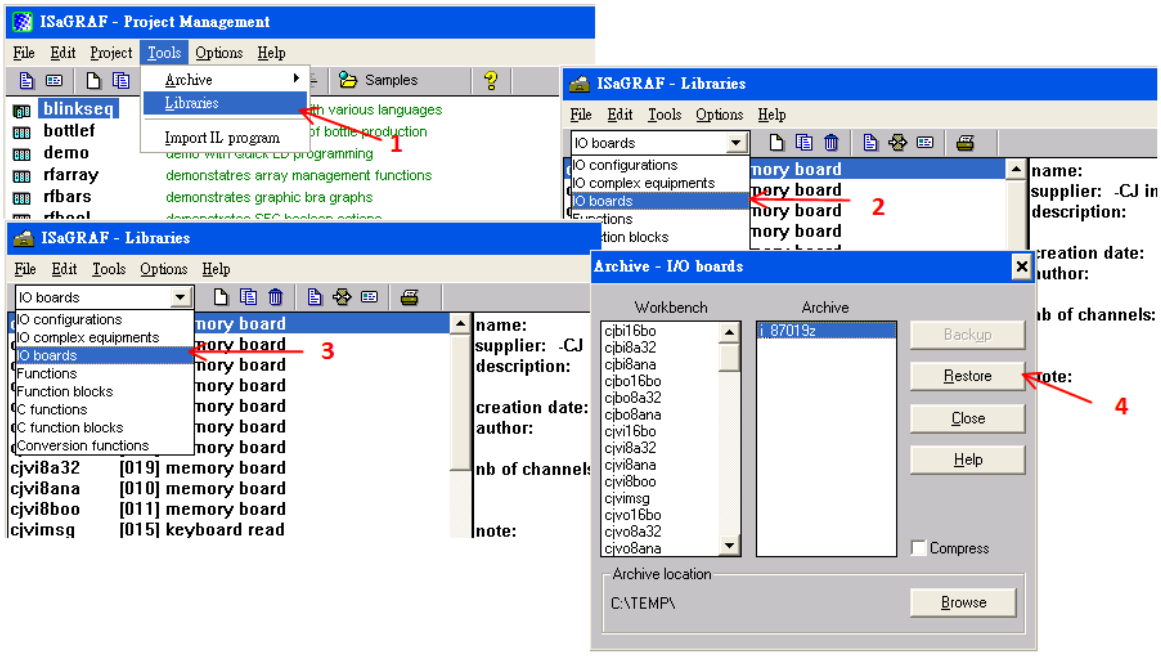


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Restore the “IO complex equipments” - “i87017d8.xia”, “i8717d16.xia”, “i8717z10.xia” and “i8717z10.xia” to the PC / ISaGRAF.



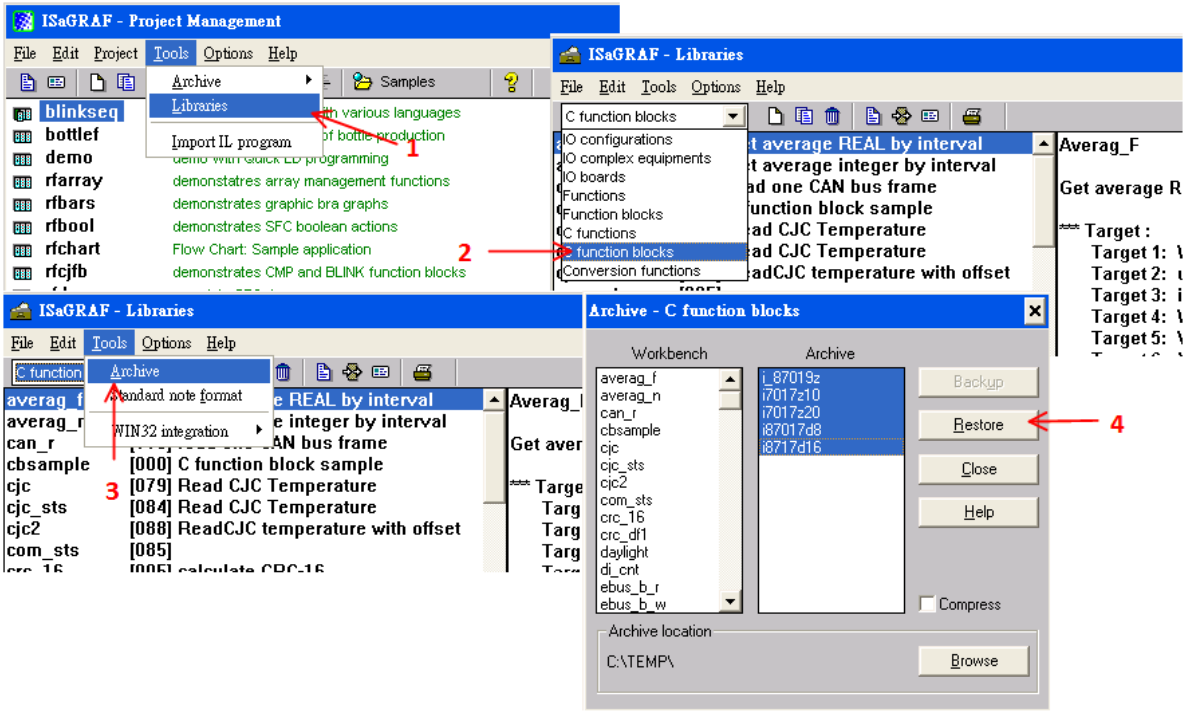

Restore the “IO Boards” - “i_87019z.bia” to the PC / ISaGRAF.





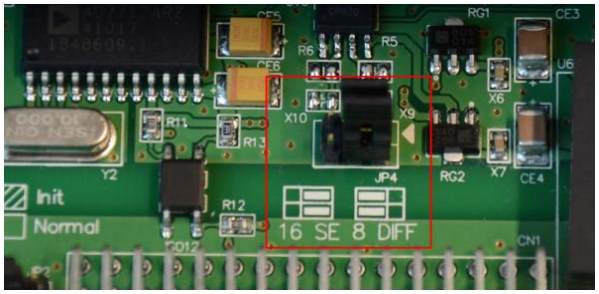

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Restore the “C- function blocks” - “i87017d8.fia”, “i8717d16.fia”, “i8717z10.fia”, “i8717z10.fia” and “i_87019z.fia” to the PC / ISaGRAF.




## 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 |

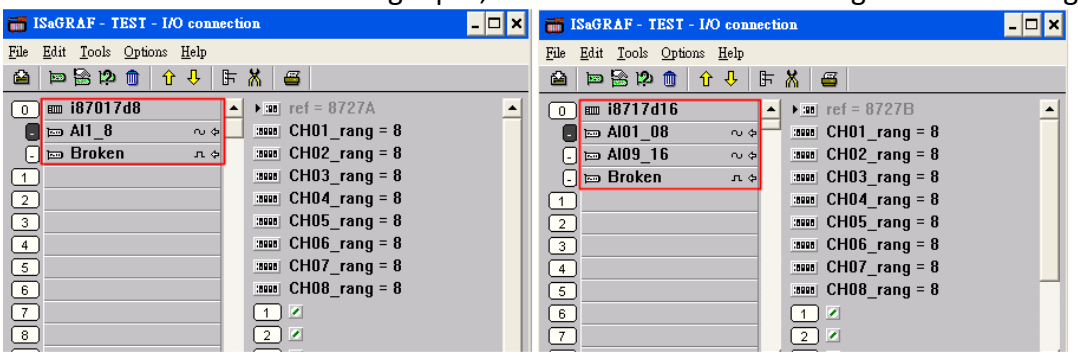


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**NOTE:** Single-Ended Analog Input cannot measure current input.

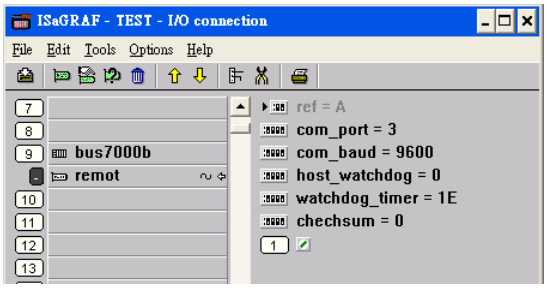
**Use the I-87017DW in the Slot 0~7 of the PAC (ISaGRAF iP/WP/XP/VP PAC):**

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.

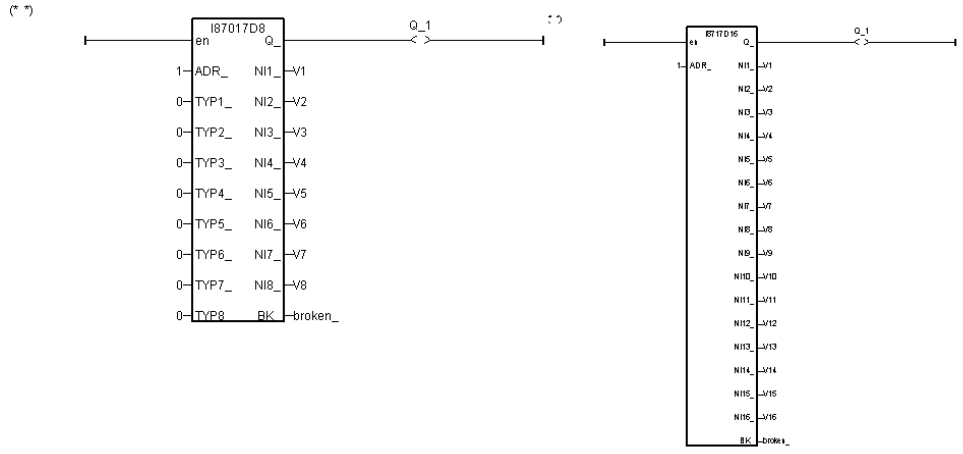



**Use the I-87017DW as a Remote I/O:**

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.

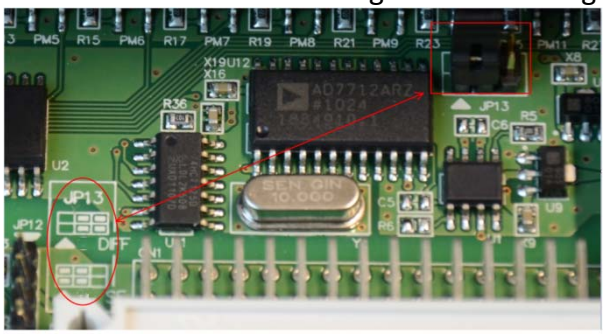
16#7 : 4mA ---> 20mA
16#1A : 0mA ---> 20mA
16#0 : means other Range (+/- 10V,+/- 5V,+/- 1V,+/- 500mV,+/- 150mV,+/- 20mA)



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## 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.



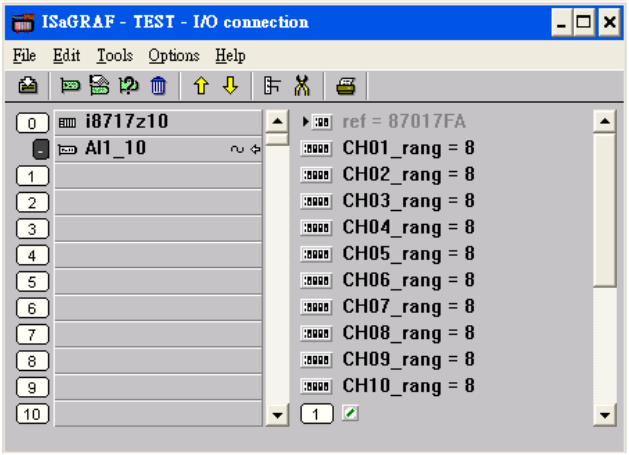

Each channel of I-87017ZW can set the individual range type, listed as below:

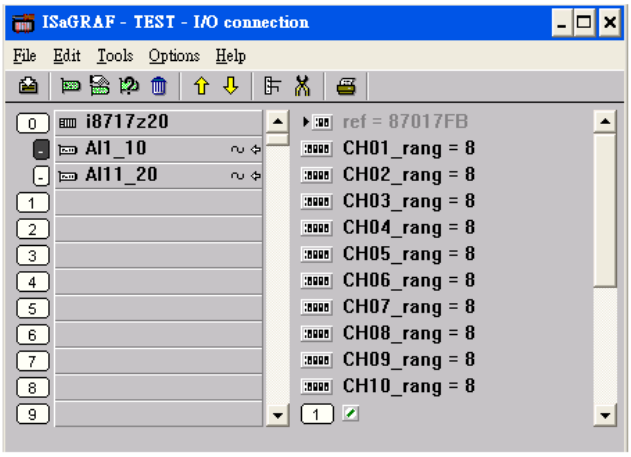
| Range Type | Physical Value | I-87017ZW Analog Input value (Decimal) | | | 10 CH. Differential | 20 CH. Single-Ended |
|---|---|---|---|---|---|---|
| | | - 32768 | 0 | +32767 | | |
| 8 | ± 10 V | -10 V | 0 V | +10 V | Support | Support |
| 9 | ± 5 V | -5 V | 0 V | +5 V | Support | Support |
| A | ± 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.



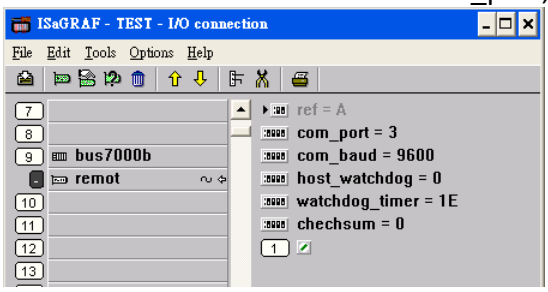

**Use the I-87017ZW as a Remote I/O:**

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

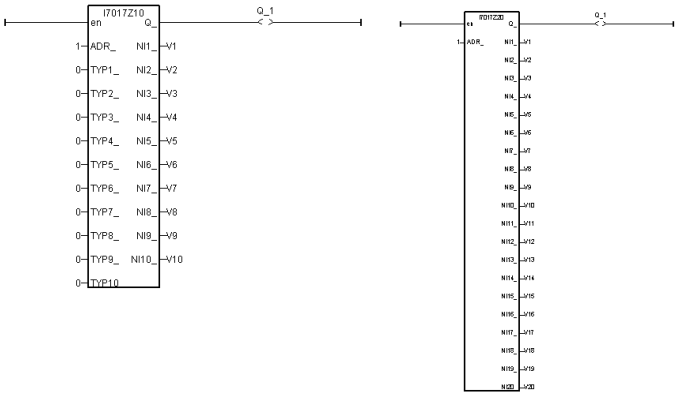


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PC to configure the I-87017ZW's Address (NET-ID), Baud-rate, range mode of channels and other settings.
In "IO connection" window, connect to "bus7000b" and set the com_port, com_baud and other settings.




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:

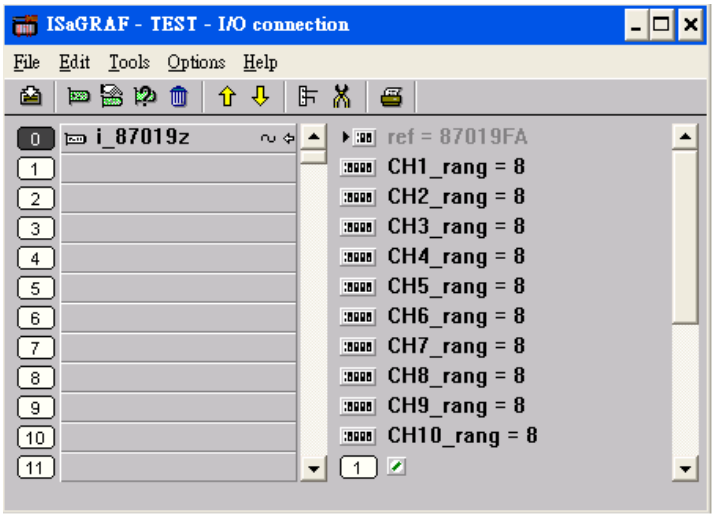
| Range Type | Physical Value | I-87019ZW Analog Input value (Decimal) | | |
|---|---|---|---|---|
| | | - 32768 | 0 | +32767 |
| 0 | ± 15 mV | -15 mV | 0 V | +15 mV |
| 1 | ± 50 mV | -50 mV | 0 V | +50 mV |
| 2 | ± 100 mV | -100 mV | 0 V | +100 mV |
| 3 | ± 500 mV | -500 mV | 0 V | +500 mV |
| 4 | ± 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 |



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| | | | | |
|---|---|---|---|---|
| 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”.

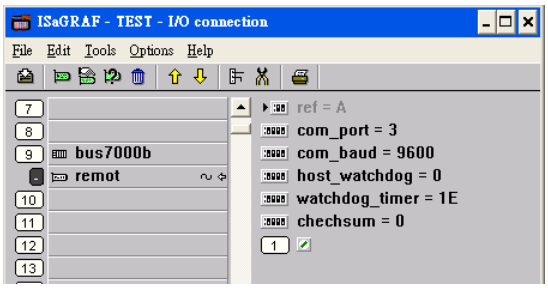




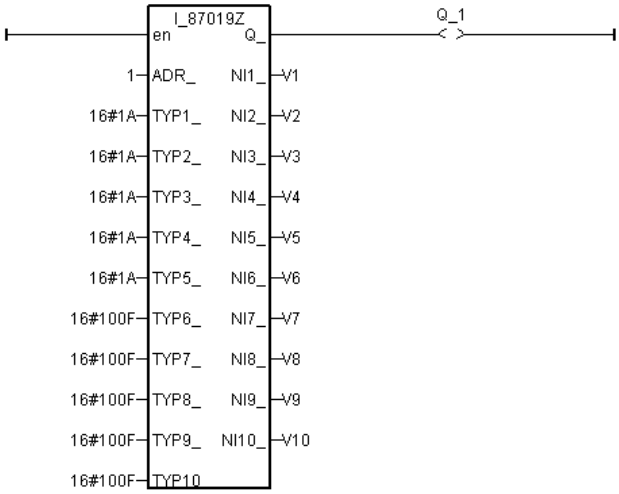

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**Use the I-87019ZW as a Remote I/O:**

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



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