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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: <u>http://www.icpdas.com/products/Remote IO/i-87k/i-87017dw.htm</u> or <u>www.icpdas.com</u> > 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: <u>http://www.icpdas.com.tw/product/solutions/remote_io/rs-485/i-8k&i-87k/i-87017zw.html</u> or <u>www.icpdas.com</u> > 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: <u>http://www.icpdas.com.tw/product/solutions/remote_io/rs-485/i-8k&i-87k/i-87019zw.html</u> or <u>www.icpdas.com</u> > 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", "i87019z.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/
- <u>www.icpdas.com</u> > ISaGRAF SoftLogic PAC > FAQ > Englich > FAQ 148 (<u>http://www.icpdas.com/faq/isagraf.htm</u> > 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.

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Restore the "IO complex equipments" - "i87017d8.xia", "i8717d16.xia", "i8717z10.xia" and "i8717z10.xia" 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	I-87017D	W Analog Ir (Decimal)	nput value	8 CH.	16 CH.	
	value	- 32768	0	+32767	Differential	Single-Ended	
8	\pm 10 V	-10 V	0 V	+10 V	Support	Support	
9	± 5 V	-5 V	0 V	+5 V	Support	Support	
А	\pm 1 V	-1 V	0 V	+1 V	Support	Support	
В	\pm 500 mV	-500 mV	0 V	+500 mV	Support	Support	
C	\pm 150 mV	-150 mV	0 V	+150 mV	Support	Support	
7	4 ~ 20 mA		4 mA	20 mA	Support	Not support	
D	\pm 20mA	- 20mA	0 mA	20mA	Support	Not support	
1A	0 ~ 20 mA		0 mA 20mA		Support	Not support	
NOTE: Single	NOTE: Single-Ended Analog Input cannot measure current input.						

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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	I-87017ZV	V Analog In (Decimal)	10 CH.	20 CH.	
	value	- 32768	0	+32767	Differential	Single-Ended
8	\pm 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
В	\pm 500 mV	-500 mV	0 V	+500 mV	Support	Support
C	\pm 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.

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3 CH04_rang = 8	
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3 CH05_rang = 8	
4 :3000 CH06_rang = 8	
5 CH07_rang = 8	
6 CH08_rang = 8	
7 CH09_rang = 8	
8 CH10_rang = 8	
9 1	-

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.

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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.

> Q_1 17017Z10 NI1 ND ND NI2 YP2___NI3_ N YP3_ NI4 YP4 NI5 YP5 NIR NIZ NI8 Έ7 ′P8_ NI9 N112 N113 NI10 'P9 N116 N117 N118

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	I-87019ZW A	nalog Input val	ue (Decimal)
	Value	- 32768	0	+32767
0	\pm 15 mV	-15 mV	0 V	+15 mV
1	\pm 50 mV	-50 mV	0 V	+50 mV
2	\pm 100 mV	-100 mV	0 V	+100 mV
3	\pm 500 mV	-500 mV	0 V	+500 mV
4	\pm 1 V	-1 V	0 V	+1 V
5	± 2.5 V	-2.5 V	0 V	+2.5 V
8	\pm 10 V	-10 V	0 V	+10 V
9	± 5 V	-5 V	0 V	+5 V
А	\pm 1 V	-1 V	0 V	+1 V
В	\pm 500 mV	-500 mV	0 V	+500 mV
С	\pm 150 mV	-150 mV	0 V	+150 mV
7	4 ~ 20 mA		4 mA	20 mA
6 • D	\pm 20mA	- 20mA	0 mA	20mA
1A	0 ~ 20 mA		0 mA	20mA

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Thermocou	ple			
E	J-Type	- 210 °C	0 °C	760 °C
		-9054	0	3276
F	K-Type	-270 ℃	0 °C	1372 °C
		-6448	0	3276
10	Т-Туре	-270 ℃	0 °C	400 °C
		-22118	0	3276
11	E-Type	-270 ℃	0 °C	1000 °C
		-8847	0	3276
12	R-Type		0 °C	1768 °(
			0	3276
13	S-Type		0 °C	1768 °(
			0	3276
14	В-Туре		0 °C	1820 °(
			0	3276
15	N-Type	-270 ℃	0 °C	1300 °(
		-6805	0	3276
16	C-Type		0 °C	2320 °(
			0	3276
17	L-Type	-200 ℃	0 °C	800 °(
		-8192	0	3276
18	M-Type	-200 ℃	0 °C	100 °(
		-32768	0	1638
19	L-Type	-200 ℃	0 °C	900 °(
	(DIN43710)	-7281	0	3276

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".

File Edit Tools Options Help Image: State of the	File Edit Tools Options Help Image: State in the	📷 ISaGRAF -	TEST - I/O connection	n	- 🗆 X
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2	2	1		CH1_rang = 8	
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4 ::sues CH4_rang = 8 5 :sues CH5_rang = 8 6 :sues CH6_rang = 8 7 :sues CH7_rang = 8 8 :sues CH8_rang = 8 9 :sues CH9_rang = 8 10 :sues CH10_rang = 8 11 ✓ 1 ✓	4 ::see: CH4_rang = 8 5 ::see: CH5_rang = 8 6 :see: CH6_rang = 8 7 :see: CH7_rang = 8 8 :see: CH8_rang = 8 9 :see: CH9_rang = 8 10 :see: CH10_rang = 8 11 ✓ 1 ✓	3		:::::: CH3_rang = 8	
5 :suee CH5_rang = 8 6 :suee CH6_rang = 8 7 :suee CH7_rang = 8 8 :suee CH8_rang = 8 9 :suee CH9_rang = 8 10 :suee CH10_rang = 8 11 • 1 •	5 ::soon CH5_rang = 8 6 ::soon CH6_rang = 8 7 ::soon CH7_rang = 8 8 ::soon CH8_rang = 8 9 ::soon CH9_rang = 8 10 ::soon CH10_rang = 8 11 ✓ 1 ✓	4		:::::: CH4_rang = 8	
6 :sees CH6_rang = 8 7 :sees CH7_rang = 8 8 :sees CH8_rang = 8 9 :sees CH9_rang = 8 10 :sees CH10_rang = 8 11 • 1 •	6 ::soon CH6_rang = 8 7 ::soon CH7_rang = 8 8 ::soon CH8_rang = 8 9 ::soon CH9_rang = 8 10 ::soon CH10_rang = 8 11 ✓ 1 ✓	5		CH5_rang = 8	
7 :see: CH7_rang = 8 8 :see: CH8_rang = 8 9 :see: CH9_rang = 8 10 :see: CH10_rang = 8 11 ✓ 1	7 ::sues CH7_rang = 8 8 :sues CH8_rang = 8 9 :sues CH9_rang = 8 10 :sues CH10_rang = 8 11 • 1 •	6		CH6_rang = 8	_
8 :sees CH8_rang = 8 9 :sees CH9_rang = 8 10 :sees CH10_rang = 8 11 <	8 ::soon CH8_rang = 8 9 :soon CH9_rang = 8 10 :soon CH10_rang = 8 11 • 1	7		CH7_rang = 8	
9 ::sour CH9_rang = 8 10 :sour CH10_rang = 8 11 • 1 ✓	9 :sound CH9_rang = 8 10 :sound CH10_rang = 8 11 • 1 •	8		CH8_rang = 8	
10 :ssee CH10_rang = 8 11 ✓ 1 ✓	10 CH10_rang = 8	9		CH9_rang = 8	
		10		CH10_rang = 8	
		11	-	1	-

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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