

## How to use Wincon-8xx7 / 8xx6 to control FRNET I/O ?

Wincon-8xx7/8xx6 supports FRNET I/O since its driver version of 3.31. Please visit below web site for more information.

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### Important:

1. Every FRNET Output module has a 'RESET' dip on its Dip switch or a special Jumper. User may set it to 'ON' position (or enable it), this will reset the output channels to OFF state when the communication is break between i-8172 and FRNET D/O module.

For example, set 8th Dip to ON of FR-2057 means enable it.

2. The communication state of D/I modules can be detected in the 8-Ch. D/I of "i-8172" in the IO connection window. However FRNET Output module doesn't support communication state detection.

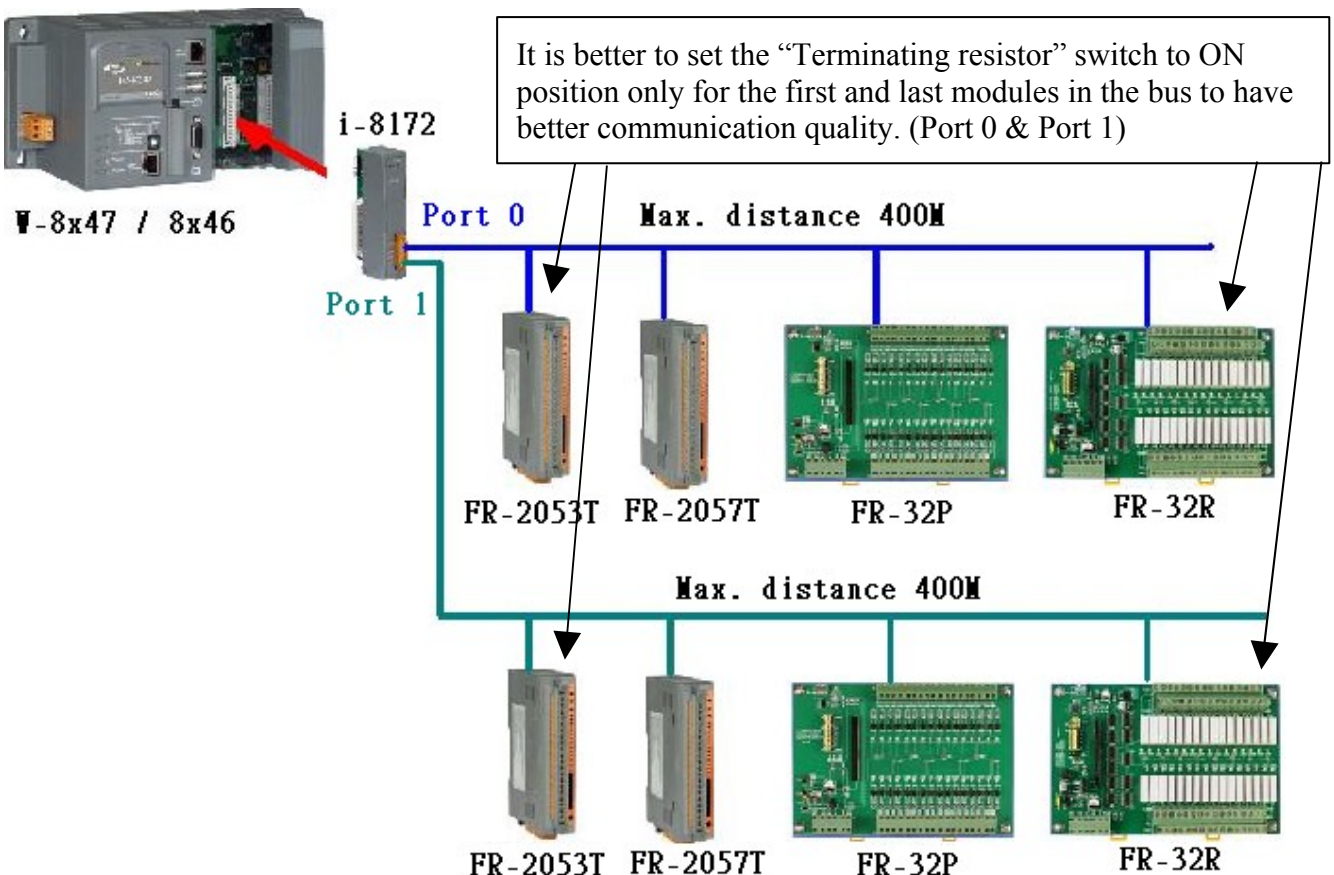
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### Advantage of FRNET I/O:

Fast scan, about 3 ms / per FRNET scan. (This depends on your program scan time, if ISaGRAF PLC program scan time is 8ms, then the scan time for all will be 8 ms, not 3 ms.)

FRNET I/O not supporting A/I & A/O yet.

Wincon-8xx7/8xx6 plus i-8172 boards (plugged in slot 1 thru. 7) can connect to FRNET I/O modules, for example, FR-2053, FR-2057, FR-32P, FR-32R.



One i-8172 board has two FRNET ports, ID is port 0 & port 1.

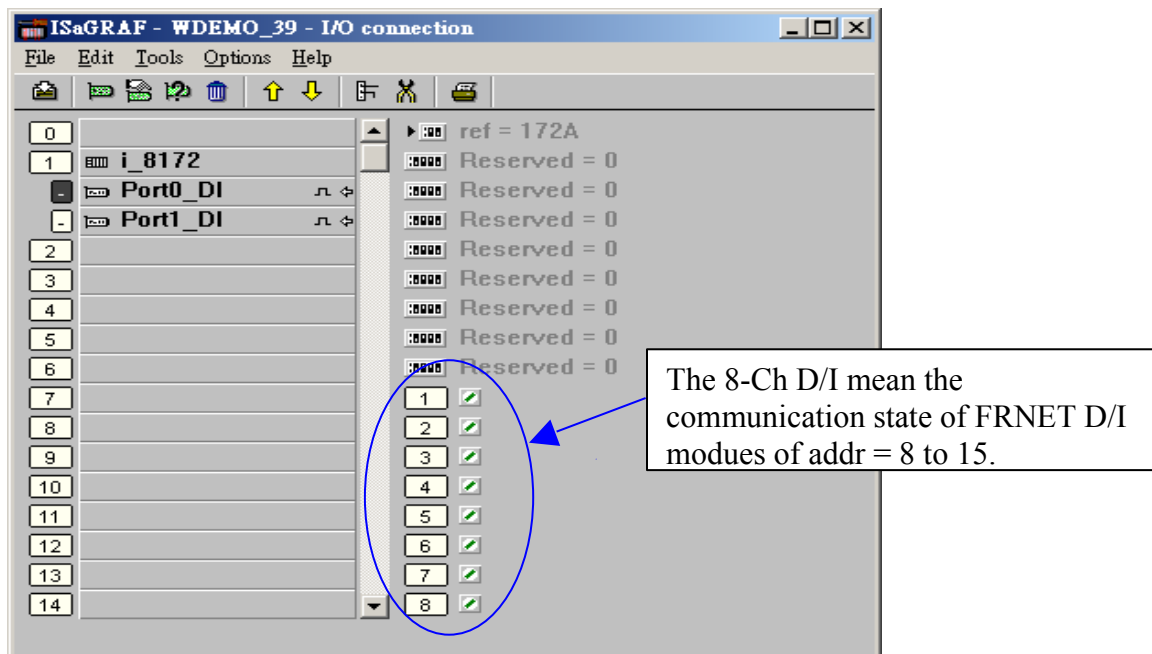
Each FRNET port can connect up to 8 FRNET D/O “Module Address” and up to 8 D/I “Module Address”. It is very important. The “Module Address” for D/O modules can only be set as 0 to 7, while D/I “Module Address” can only be set as 8 to 15.

The max. I/O channel number for one FRNET “Module Address” is 16. That means one i-8172 can connect max. 2 (ports) x 8 x 16 = 256 ch. of digital output plus max. 2 x 8 x 16 = 256 ch. of digital input. You may plug up to 7 pcs. of i-8172 in the W-8xx7/8xx6 depends on your application.

**Note:** ISaGRAF 3.x can program FRNET I/O by using “i-8172” I/O complex equipment & “fr\_b” & “fr\_b\_a” functions. If your IsaGRAF doesn't support them.

Below is a demo program show you how to program FRNET I/O.

Step 1: Connecting i-8172 in the related slot in the IO connection windows. W-8xx7/8xx6's slot No. is from 1 to 7.



Step 2: Declaring ISaGRAF variable

Name	Type	Attribute	Description
INIT	Boolean	<b>Internal</b>	Init as True
TMP	Boolean	<b>Internal</b>	temporary boolean variable
DO_Array[0..15]	Boolean	<b>Internal</b>	Set NetW addr = 11, <b>variable array</b> Will map to 16-chanel FRNET DO channels
DI_2053_01 ~ DI_2053_16	Boolean	<b>Internal</b>	Will map to 16-chanel FRNET DI channels

Step 3: writing ST program to map ISaGRAF boolean variable as FRNET I/O

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if INIT then (* Only do it once in 1st PLC scan, INIT is declared as True in the dictionary *)

INIT := False ; (* No more *)

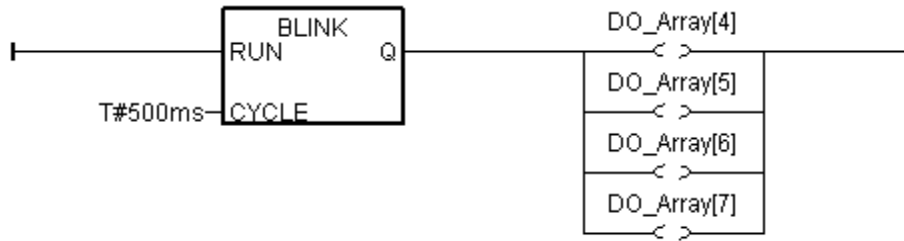
(* User may choose to use "fr_b" or "fr_b_a" to set as FRNET IO variable.
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Please use "fr_b" to set ISaGRAF variable as FRNET I/O only in 1st PLC scan
Please use "fr_b_a" to set ISaGRAF "variable array" as FRNET I/O only in 1st PLC scan
----- *)

(* Set boolean variable "DI_2053_01" to "DI_2053_16" as FRNET IO *)
(* at Slot=1, FRNET port=0, I/O Module Addr=8 , Ch. 1 to 16 *)
TMP := Fr_B(1, 0, 8, 1, DI_2053_01) ; (* 1st channel *)
TMP := Fr_B(1, 0, 8, 2, DI_2053_02) ;
TMP := Fr_B(1, 0, 8, 3, DI_2053_03) ;
TMP := Fr_B(1, 0, 8, 4, DI_2053_04) ;
TMP := Fr_B(1, 0, 8, 5, DI_2053_05) ;
TMP := Fr_B(1, 0, 8, 6, DI_2053_06) ;
TMP := Fr_B(1, 0, 8, 7, DI_2053_07) ;
TMP := Fr_B(1, 0, 8, 8, DI_2053_08) ;
TMP := Fr_B(1, 0, 8, 9, DI_2053_09) ;
TMP := Fr_B(1, 0, 8, 10, DI_2053_10) ;
TMP := Fr_B(1, 0, 8, 11, DI_2053_11) ;
TMP := Fr_B(1, 0, 8, 12, DI_2053_12) ;
TMP := Fr_B(1, 0, 8, 13, DI_2053_13) ;
TMP := Fr_B(1, 0, 8, 14, DI_2053_14) ;
TMP := Fr_B(1, 0, 8, 15, DI_2053_15) ;
TMP := Fr_B(1, 0, 8, 16, DI_2053_16) ; (* 16th channel *)

(* Set "Variable array" as FRNET IO, its variable array 's Network address = 11 (declared in the
"Dictionary" windows,in this example) *)
(* at Slot=1, FRNET port=0, Starting from I/O Module Addr=4 , Ch. = 1, variable array 's
Network address = 11, Num = 16 *)
TMP := Fr_B_A(1, 0, 4, 1, 11, 16) ;

end_if ;
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Step 4: Write a Ladder program to blink output of DO\_Array[4] to [7]



Step 5: How to test ?

Please plug i-8172. into slot 1 of the W-8xx7/8xx6 (make sure the Wincon ISaGRAF driver version is 3.31 or later)

This i-8172 's Port 0 connect to one FR-2053 (16-Ch. DI) and one FR-2057 (16-Ch. DO).

The FR-2053's ADDR = 8 (dip switch 4 = ON, other dips 1,2,3, ,5,6,7,8 is OFF)

The FR-2057's ADDR = 4 (dip switch 3 = ON, other dips 1,2, ,4,5,6,7,8 is OFF)

Note:

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FRNET DO module, for example FR-2057 can only set module ADDR as 0 to 7

FRNET DI module, for example FR-2053 can only set module ADDR as 8 to 15  
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Then after you download this ISaGRAF project into W-8xx7/8xx6, you will see the DO 5 to 8 is blink in period of 0.5 second.