WISE Application:

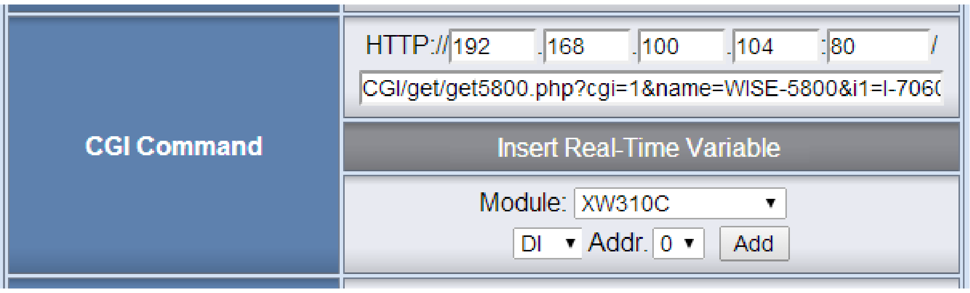
Web Server receiving CGI Commands

WISE controller supports CGI command sending function that can be used to control the remote devices or send back the channel data to back-end server. This document provides an example of CGI channel data transmission. It will show you how to set up CGI commands and how to use them to work with ready-to-use web-side code to receive the I/O channel data sent by WISE and display the data on webpage. Each data has a specific tag therefore could be freely used for further analysis or other purposes.

WISE-5800 and WISE-7126 work as controllers in this scenario.WISE-5800 will be connected to XW-board (XW-310C) and remote modules (I-7060, I-7005 and DL-100). The channel data of the XW-board and remote modules that are connected toWISE-5800, and the channel data of WISE-7126 will be transferred to the Web server, and will be displayed on the webpage, the update frequency will be 5 seconds. We will need to set up settings for both WISE controllers and Web Server:

Settings for WISE Controllers

1. Set up CGI Command settings on the Advanced Setting page of Logic Setting section for WISE controllers (for detailed settings please refer to WISE User Manual or WISE webpage).



CGI Command

HTTP:// 192 .168 .100 .104 :80 /

CGI/get/get5800.php?cgi=1&name=WISE-5800&i1=I-706(

Module: XW310C

DI Addr. 0

The content length of one CGI command cannot exceed 400 characters; therefore we will use two CGI commands to perform operations for I-7000, XW-Board and RTU modules that are connected to WISE-5800. The channel data and Internal Register data of WISE-7126 CGI can be set in one single command; totally we will set 3 commands as follow.

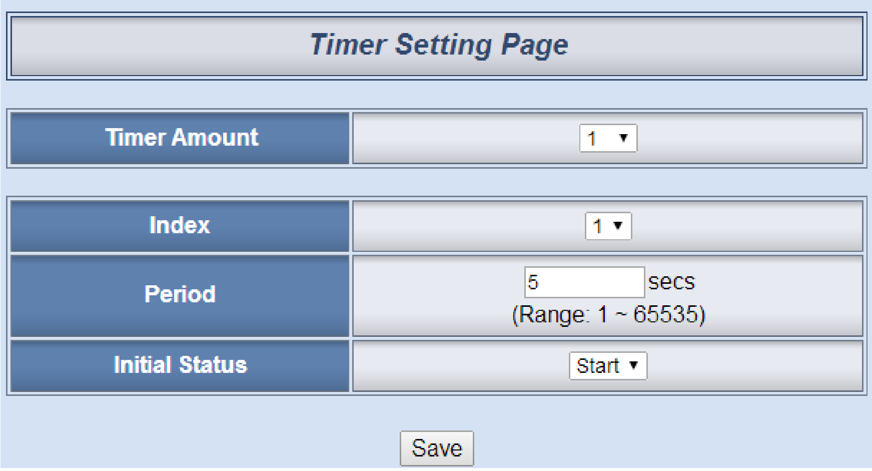
- **WISE-5800 CGI Command 1**: (this CGI command is in charge of the transmission of the channel data of I-7000 modules (I-7060 & I-7005) that are connected to WISE-5800.
  *CGI/get/**get5800.php**?**cgi=1**&name=WISE-5800&**i1=I-7060**&i1di0=$m1di0&i1di1=$m1di1&i1di2=$m1di2&i1di3=$m1di3&i1do0=$m1do0&i1do1=$m1do1&i1do2=$m1do2&i1do3=$m1do3&**i2=I-7005**&i2do0=$m2do0&i2do1=$m2do1&i2do2=$m2do2&i2do3=$m2do3&i2do4=$m2do4&i2do5=$m2do5&i2ai0=$m2ai0&i2ai1=$m2ai1&i2ai2=$m2ai2&i2ai3=$m2ai3&i2ai4=$m2ai4&i2ai5=$m2ai5&i2ai6=$m2ai6&i2ai7=$m2ai7*

- **WISE-5800 CGI Command 2:** (this CGI command is in charge of the transmission of the channel data of XW-Board and RTU module (DL-100) that are connected to WISE-5800.
  *CGI/get/**get5800.php**?**cgi=2**&**xwboard=XW-310C**&di0=$xdi0&di1=$xdi1&di2=$xdi2&do0=$xdo0&do1=$xdo1&do2=$xdo2&ai0=$xai0&ai1=$xai1&ai2=$xai2&ai3=$xai3&ao0=$xao0&ao1=$xao1&**r17=DL-100**&r17ai0=$n17ri0&r17ai1=$n17ri1&r17ai2=$n17ri2*

- **WISE-7126 CGI Command 1:** (this CGI command is in charge of the transmission of the channel data & the value of Internal Register 9 of WISE-7126.
  *CGI/get/**get7126.php**?**cgi=1**&name=WISE-7126&nickname=test3&note=test1&di0=$di0&di1=$di1&do0=$do0&do1=$do1&ao0=$ao0&ao1=$ao1&ai0=$ai0&ai1=$ai1&ai2=$ai2&ai3=$ai3&ai4=$ai4&ai5=$ai5&dic0=$ci0&dic1=$ci1&doc0=$co0&doc1=$co1&**ir9=$ir9***

In the above CGI commands, first we will insert the php program for retrieving data. In this case, the php program to be used will be get5800.php for WISE-5800 and get7126.php for WISE-7126. After inserting the php program, we will put the number of the CGI command by inserting “cgi=number” (the CGI number in this case will be 1, 2, or 3). And then input the name of php variables “name=value” for sending information of controller name and channel data. Please refer to the appendix to find the variable tags for channel name and real-time data of the channel, each variable is separated by “&”.

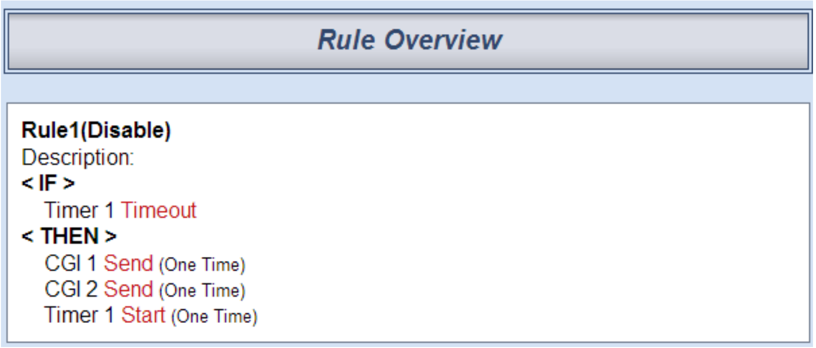
2. Set the timer and set up the IF-THEN-ELSE rule to send CGI command every 5 seconds to update the latest information displayed on webpage (for detailed settings please refer to WISE User Manual or WISE webpage).



Timer Setting Page

Timer Amount	1 ▾
Index	1 ▾
Period	5 secs (Range: 1 ~ 65535)
Initial Status	Start ▾

The Rule setting is as follow:



Rule Overview

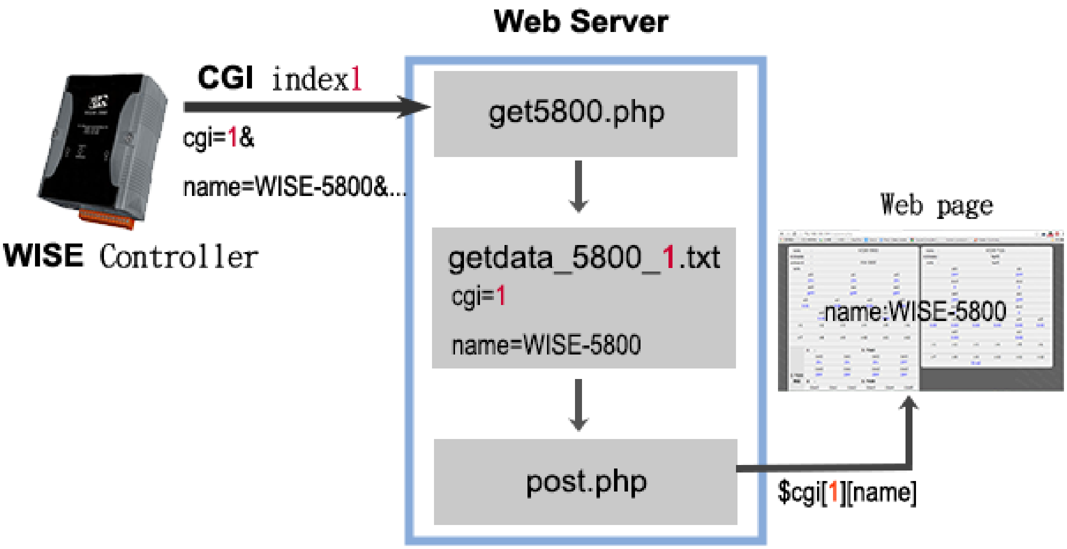
Rule1(Disable)
Description:
< IF >
Timer 1 Timeout
< THEN >
CGI 1 Send (One Time)
CGI 2 Send (One Time)
Timer 1 Start (One Time)

➢ This rule setting applies to both WISE-7126& WISE-5800.

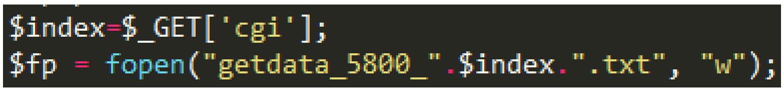
Web Server side:

1. Make sure the Web Server you are using supports PHP, please follow the instruction of the Web Server you are using to install PHP module on it. In this case we will use Apache as the Web Server. Start the local side Apache and open the browser; input “http://localhost/ “in the address bar to check if the Web Server is working. (Please go to http://www.appservnetwork.com/ to download apache+php+mysq software package)

2. Put the CGI folder under the root directory of the Web Server (eg: for appserv, the root directory will be “www”, and for xampp, the root directory will be “htdocs”). The CGI folder includes a “get” folder that contains get5800.php and get7126.php, they can be used to receive data and store the data in a txt file; and by using post.php, the data in the text file can be retrieved and displayed on the web page.

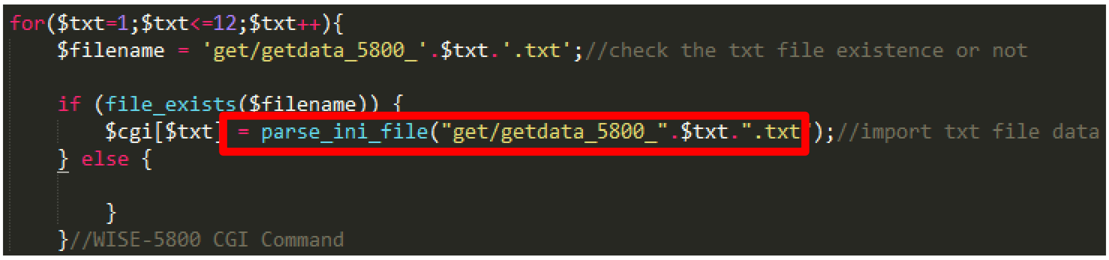


When the WISE controller receive a CGI command, it will retrieve the data specified in the command, by using get5800.php and get7126.php, the data will be transferred into txt file and will be saved in the form of getdata_5800_1.txt (indicating this txt file includes the data retrieved from WISE-5800 that is required by CGI command 1)



```
$index=$_GET['cgi'];
$fp = fopen("getdata_5800_".$index.".txt", "w");
```

The txt file (contains channel data of the controller) will be imported to the web page by post.php automatically. (p.s. to import different txt files generated by requirements from different CGI commands or to import a txt file with txt file name that is not in regular format, please modify the command by inputting appropriate txt file names to import the files).

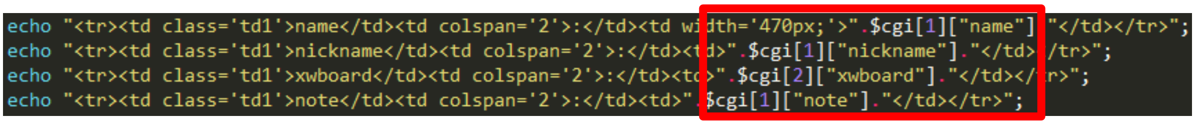


```
for($txt=1;$txt<=12;$txt++){
    $filename = 'get/getdata_5800_'.$txt.'.txt';//check the txt file existence or not

    if (file_exists($filename)) {
        $cgi[$txt] = parse_ini_file("get/getdata_5800_".$txt.".txt");//import txt file data
    } else {

        }
    }//WISE-5800 CGI Command
```

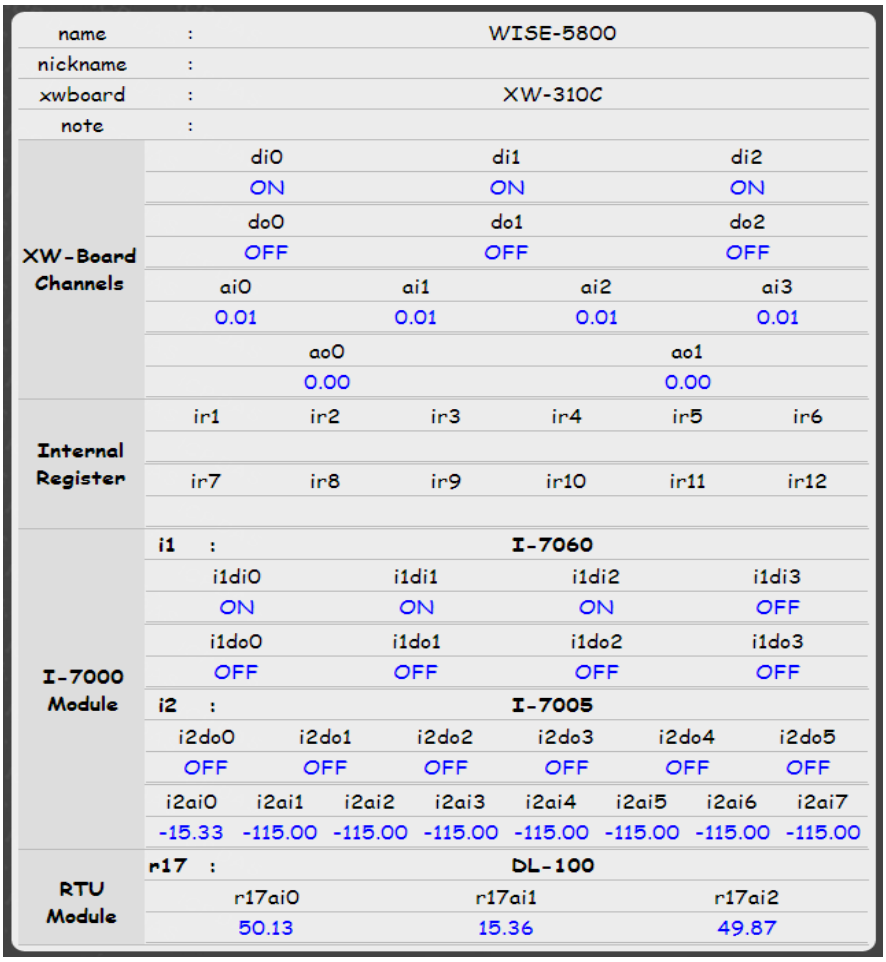
All data can be freely used by specifying variable names ($cgi[CGI command index][Variable name]) and the folder the txt file(contains the data) locates. As shown in the following figure, $cgi[1]["name"] indicates the “name” data required from CGI command 1 and $cgi[2]["xwboard"] indicates the “xwboard” data required from CGI command 2.



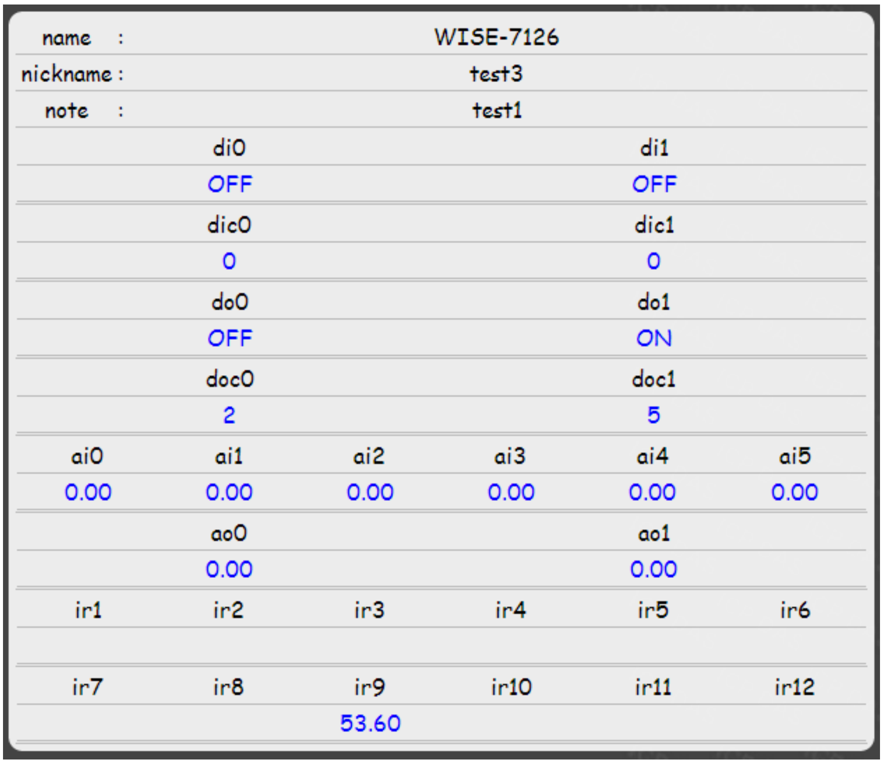
```
echo "<tr><td class='td1'>name</td><td colspan='2'>:</td><td width='470px;'>".$cgi[1]["name"]."</td></tr>";
echo "<tr><td class='td1'>nickname</td><td colspan='2'>:</td><td>".$cgi[1]["nickname"]."</td></tr>";
echo "<tr><td class='td1'>xwboard</td><td colspan='2'>:</td><td>".$cgi[2]["xwboard"]."</td></tr>";
echo "<tr><td class='td1'>note</td><td colspan='2'>:</td><td>".$cgi[1]["note"]."</td></tr>";
```

3. Make sure all controller settings are accurate, input http://localhost/CGI/post.php in the address bar of the browser to display data of each channel on web page.

For this case, the Web Page (post.php) will be shown as below:



name	:	WISE-5800						
nickname	:							
xwboard	:	XW-310C						
note	:							
XW-Board Channels	di0	di1	di2					
	ON	ON	ON					
	do0	do1	do2					
	OFF	OFF	OFF					
	ai0	ai1	ai2	ai3				
	0.01	0.01	0.01	0.01				
	ao0	ao1						
	0.00	0.00						
Internal Register	ir1	ir2	ir3	ir4	ir5	ir6		
	ir7	ir8	ir9	ir10	ir11	ir12		
I-7000 Module	i1 :	I-7060						
	i1di0	i1di1	i1di2	i1di3				
	ON	ON	ON	OFF				
	i1do0	i1do1	i1do2	i1do3				
	OFF	OFF	OFF	OFF				
	i2 :	I-7005						
	i2do0	i2do1	i2do2	i2do3	i2do4	i2do5		
	OFF	OFF	OFF	OFF	OFF	OFF		
	i2ai0	i2ai1	i2ai2	i2ai3	i2ai4	i2ai5	i2ai6	i2ai7
	-15.33	-115.00	-115.00	-115.00	-115.00	-115.00	-115.00	-115.00
RTU Module	r17 :	DL-100						
	r17ai0	r17ai1	r17ai2					
	50.13	15.36	49.87					



name :	WISE-7126				
nickname :	test3				
note :	test1				
di0	di1				
OFF	OFF				
dic0	dic1				
0	0				
do0	do1				
OFF	ON				
doc0	doc1				
2	5				
ai0	ai1	ai2	ai3	ai4	ai5
0.00	0.00	0.00	0.00	0.00	0.00
ao0	ao1				
0.00	0.00				
ir1	ir2	ir3	ir4	ir5	ir6
ir7	ir8	ir9	ir10	ir11	ir12
		53.60			

Appendix: Tags for module and channel data

The php programs such as get5800.php and get7126.php follow the same name tag rule as below:

[WISE-71xx]

name	WISE-7126(Name of the module)
nickname	71xx test(Nickname of the module)
note	Description

	0	1	2	3	4	5	6
DI	di0	di1	di2	di3	di4	di5	di6
DO	do0	do1	do2	do3	do4	do5	do6
AI	ai0	ai1	ai2	ai3	ai4	ai5	ai6
AO	ao0	ao1	ao2	ao3	ao4	ao5	ao6
IR	-	ir1	ir2	ir3	ir4	ir5	ir6
DI Counter	dic0	dic1	dic2	dic3	dic4	dic5	dic6
DO Counter	doc0	doc1	doc2	doc3	doc4	doc5	doc6

[WISE-7901(X-board)]

name	WISE-7901(Name of the module)
nickname	7901 test(Nickname of the module)
xboard	X-board Module
note	Description

	0	1	2	3	4	5	6
DI	di0	di1	di2	di3	di4	di5	di6
DO	do0	do1	do2	do3	do4	do5	do6
AI	ai0	ai1	ai2	ai3	ai4	ai5	ai6
AO	ao0	ao1	ao2	ao3	ao4	ao5	ao6
IR	-	ir1	ir2	ir3	ir4	ir5	ir6
DI Counter	dic0	dic1	dic2	dic3	dic4	dic5	dic6
DO Counter	doc0	doc1	doc2	doc3	doc4	doc5	doc6

[WISE-580x(XW-board)]

name	WISE-5800(Name of the module)
nickname	5800 test(Nickname of the module)
xwboard	XW-board Module
note	Description

	0	1	2	3	4	5	6
DI(XW-board)	di0	di1	di2	di3	di4	di5	di6
DO(XW-board)	do0	do1	do2	do3	do4	do5	do6
AI(XW-board)	ai0	ai1	ai2	ai3	ai4	ai5	ai6
AO(XW-board)	ao0	ao1	ao2	ao3	ao4	ao5	ao6
IR	-	ir1	ir2	ir3	ir4	ir5	ir6
DI Counter	dic0	dic1	dic2	dic3	dic4	dic5	dic6
I-7000 Module (address)	**i1**	**i2**	**i3**	**i4**	**i5**	**i6**	**i7**
RTU Module (address)	**r1**	**r2**	**r3**	**r4**	**r5**	**r6**	**r7**
remote Discrete Input	di0	di1	di2	di3	di4	di5	di6
remote Coil Output	do0	do1	do2	do3	do4	do5	do6
remote Input Register	ai0	ai1	ai2	ai3	ai4	ai5	ai6
remote Holding Register	ao0	ao1	ao2	ao3	ao4	ao5	ao6

[WISE-580x-MTCP(XW-board)]

name	WISE-5800-MTCP(Name of the module)
nickname	5800-MTCP test(Nickname of the module)
xwboard	XW-board Module
note	Description

	0	1	2	3	4	5	6
DI(XW-board)	di0	di1	di2	di3	di4	di5	di6
DO(XW-board)	do0	do1	do2	do3	do4	do5	do6
AI(XW-board)	ai0	ai1	ai2	ai3	ai4	ai5	ai6
AO(XW-board)	ao0	ao1	ao2	ao3	ao4	ao5	ao6
IR	-	ir1	ir2	ir3	ir4	ir5	ir6
DI Counter	dic0	dic1	dic2	dic3	dic4	dic5	dic6
TCP Module (Index)	**t1**	**t2**	**t3**	**t4**	**t5**	**t6**	**t7**
remote Discrete Input	di0	di1	di2	di3	di4	di5	di6
remote Coil Output	do0	do1	do2	do3	do4	do5	do6
remote Input Register	ai0	ai1	ai2	ai3	ai4	ai5	ai6
remote Holding Register	ao0	ao1	ao2	ao3	ao4	ao5	ao6

- The Internal Register number starts from 1, so the Internal Register of CGI commands also start from 1.
- If the channel number exceeds the range listed above, it also follows the same rule for name tag.
- The name tags for external modules begin with the address of the module.
- The name tags for remote Modbus module channel (remote Discrete Input, remote Coil Output, remote Input Register, remote Holding Register) will be composed by the module address/Index+ channel name, such as: t1di0, i5ai6.