



IRU151_IRU152

OPC UA User Manual



Revision History

Version	Revision Date	Author	Description
1.0	2018/07/18	Ryan	1 st release

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CHAPTER 1 Introduction

This document provides detailed information on how to use the IRU152/IRU151 OPC UA Server. It also shows how to control the DIO function and easily acquire AI single value via the OPC UA Server.

CHAPTER 2 Function List

This chapter describes the functions of the IRU151_152 OPC UA server. Information of the available nodes is as follows:

Node	Node type	Description
Set_AI	Method	Set AI channel and input range.
Get_AI_SingleValue	Variable	Get the AI single voltage.
Get_DO_Status	Variable	Read state on digital output channels.
Get DI Status	Variable	Read state on digital input channels.
Set_DO_PWM	Method	Set digital output channel 0 as PWM mode
Set DI Counter	Method	Set digital input channel 0 as DI counter mode
Get DI Counter	Variable	Read digital input channel 0 counter number
 Set_DO_Status	Method	Set digital output channels state.

2.1 Set_AI

- Description
 Set the AI channels and input range.
- Input Arguments

Input 0 : Setting AI channel; bit 0 to 3 indicates channel 0 ~ 3.

- 1 : Setting channel 0 enable.
- 2 : Setting channel 1 enable.

3 : Setting channel 2 enable.

- 15 : Setting channel 0 3 enable.
- Input 1 : Setting AI input range.
 - 0:0V~+5V.
 - 1 : 0V ~ +10V.
 - 2 : -5V ~ +5V.
 - 3 : -10V ~+10V.
- Output Arguments

Output 0 : Return setting channel function status code.

0 : Success.

Other : Represents an error (See Error Code).

Output 1 : Return setting input range function status code.

0 : Success.

Other : Represents an error (See Error Code).

2.2 Get_Al_SingleValue

Description

Get the AI single voltage with the selected channels and input range.

- InputArguments
 [None]
- OutputArguments
 Output 0 : Return AI single value data.

2.3 Set_DO_Status

Description

Set the DO status on the selected channel.

InputArguments

Input 0 : Setting DO channel; bit 0 to 1 indicates channel 0 ~ 1.

- 1 : channel 0.
- 2 : channel 1.
- 3 : channel 0 & channel 1.
- Input 1 : Setting DO level; bit 0 to 1 indicates the status of channel 0 ~ 1.
 - 0 : channel 0 & channel 1 as Low.
 - 1 : channel 0 as High; channel 1 as Low.
 - 2 : channel 0 as Low; channel 1 as High.
 - 3 : channel 0 & channel 1 as High.
- OutputArguments

Output 0 : Return set DO status function status code.

0 : success.

Other : Represents an error (See Error Code).

2.4 Get_DO_Status

- Description
 Get the DO status on the selected channel.
- InputArguments
 [None]
- OutputArguments

Output 0 : Return current DO output status.

- 0 : channel 0 & channel 1 as Low .
- 1 : channel 0 as High; channel 1 as Low.
- 2 : channel 0 as Low; channel 1 as High.
- 3 : channel 0 & channel 1 as High.

2.5 Get_DI_Status

- Description
 Get current DI status.
- InputArguments
 [None]
- OutputArguments

Output 0 : Return current DI status.

- 0 : channel 0 & channel 1 as Low.
- 1 : channel 0 as High; channel 1 as Low.
- 2 : channel 0 as Low; channel 1 as High.
- 3 : channel 0 & channel 1 as High.

2.6 Set_DO_PWM

Description

Enable PWM mode on channel 0 and set required parameters.

InputArguments

Input 0 : Setting the range of the duty cycle, from 1(%) to 99(%).

0 : stop PWM mode

1(%) to 99(%) : Setting the range of the duty cycle and start PWM mode

Input 1 : Setting the range of the value, from 1 to 500(Hz).

OutputArguments

Output 0 : Return set DO PWM function status code.

0 : success.

Other : Represents an error (See Error Code).

2.7 Set_DI_Counter

- Description
 - Enable the DI channel 0 as counter mode.
- InputArguments
 Input 0 : Setting the trigger condition .
 - 0 : Raising edge.
 - 1 : Falling edge.
 - 2 : Both.
 - Input 1 : Setting the number of counts (1~65535).
- OutputArguments

Output 0 : Return set DI counter function status code.

0 : success.

Other : Represents an error (See Error Code).

2.8 Get_DI_Counter

- Description
 Get current DI counter number.
- InputArguments
 [None]
- OutputArguments
 Output 0 : Return current DI counters.

CHAPTER 3 How to Start an OPC UA Server

This section describes how to install an OPC UA server. The OPC UA demo server application is available on the Axiomtek website. Please download and install the IRU151_152-OPCUA-application in the IRU151 or IRU152 system

~# Is

root@rsb201:~∦ ls IRU151-152_OPCUA.tar.gz

Extract IRU151-152_OPCUA.tar.gz

~# tar xvf IRU151-152_OPCUA.tar.gz -C .

root@rsb201:~# tar xvf IRU151-152_OPCUA.tar.gz -C .
IRU151-152_OPCUA /
IRU151-152_OPCUA /OPCUA_lib/
IRU151-152_OPCUA /OPCUA_lib/libopcua.so.1.3.1
IRU151-152_OPCUA /bin/
IRU151-152_OPCUA /OPCUA_lib/libopcua.so.0
IRU151-152_OPCUA /install.sh
IRU151-152_OPCUA /OPCUA_lib/libopcua.so
IRU151-152_OPCUA /bin/DemoServerOPCUA
IRU151-152_OPCUA /OPCUA_lib/libopcua.o

Install library. Please enter IRU151-152_OPCUA directory and run install.sh scripit

~# cd IRU151-152_OPCUA

~# ./install

root@rsb201:⊶# cd	IRU151-152_OPCUA
root@rsb201:~/IRU1	51-152 OPCŪÅ≇ ./install.sh
Install OPC UA lib	prary successfully.

After installing library, run OPCUA application located in IRU151-152_OPCUA/bin.

~# cd bin

~# ./DemoServerOPCUA

```
root@rsb201:~/IRU151-152_OPCUA# cd bin/
root@rsb201:~/IRU151-152_OPCUA/bin# ./DemoServerOPCUA
Usage: ./DemoServerOPCUA [IRU151/IRU152] [Port]
IRU151/IRU152: 0/1
Port: Port number
Example: ./DemoServerOPCUA 1 3088
```

Run the OPC UA application. You must know your system is IRU151 or IRU152 and assign a corresponding port number. If your system is IRU151, follow the example below:

root@rsb201:~/IRU151-152	_OPCUA/bin#	./DemoServerOPCUA	0	308	8		
[2018-07-24 01:28:10.944	(UTC+0000)] info/network		TCP	network	layer	listen
ing on opc.tcp://rsb201:	3088/						

If your system is IRU152, follow the example below:

root@rsb201:~/IRU151-152_OPCUA/bin# ./DemoServerOPCU	JA 1	3088	3		
[2018-07-24 01:34:47.472 (UTC+0000)] info/network		TCP	network	layer	listen
ing on opc.tcp://rsb201:3088/					

If you want to stop the OPC UA server, just press "Ctrl + C".

root@rsb201:~/IRU151-152_OPCUA/bin# ./DemoServerOPCUA 1	3088
[2018-07-24 01:34:47.472 (UTC+0000)] info/network	TCP network layer listen
ing on opc.tcp://rsb201:3088/	
^C[2018-07-24 01:35:13.818 (UTC+0000)] info/server	received ctrl-c
[2018-07-24 01:35:13.819 (UTC+0000)] varn/network	Socket select failed wit
h Interrupted system call	
[2018-07-24 01:35:13.820 (UTC+0000)] info/network	Shutting down the TCP ne
twork layer	
[2018-07-24 01:35:14.102 (UTC+0000)] info/server	Close IRU device.

CHAPTER 4 Using the IRU151-152 OPC UA server

This section presents an actual demonstration of running the IRU152-152 OPC UA server. If no OPC UA client tool has been installed, follow steps below to quickly install a simple OPC UA client tool in Ubuntu.

- 1. Install OPC UA client tool
 - 1.1 Install host system.

Download Ubuntu 14.04 LTS iso image and install.

1.2 Install OPC UA client tool.

Install host packages required by OPC UA client tool.

- ~\$ sudo apt-get update
- ~\$ sudo apt-get upgrade
- ~\$ sudo apt-get install python3-pip3 python3-pyqt5
- ~\$ sudo pip3 install --upgrade pip setuptools
- ~\$ sudo pip3 install cryptography pyqtgraph opcua-client
- 2. Start IRU151 or IRU152 OPC UA server.
 - 1.1 Power on and connect to IRU151 or IRU152.

```
### ax_msg: 10 board IRU152 detected, mount ax93907 driver
IRU Driver is loaded , version 1.0.3
usbcore: registered new interface driver IRU Moudle
Set ttymxcl to mode=1, tem=0
Starting wdt_driver (timeout: 10, sleep: 5, test: ioctl)
Trying to set timeout value=10 seconds
The actual timeout was set to 10 seconds
Now reading back -- The timeout is 10 seconds
Poky (Yocto Project Reference Distro) 1.8.1-6 rsb201 /dev/ttymxc0
rsb201 login: root
```

1.2 Check IRU151 or IRU152 IP address, and start OPC UA server.

~# ifconfig

root@rsb201:~/IRU151-152_OPCUA/bin∦ ifconfig
eth0 Link encap:Ethernet HWaddr 00:60:E0:12:34:56
inet addr:10.1.70.212 Bcast:10.1.71.255 Mask:255.255.254.0
inet6 addr: fe80::260:e0ff:fe12:3456/64 Scope:Link
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:4414 errors:0 dropped:662 overruns:0 frame:0
TX packets:142 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:980177 (957.2 KiB) TX bytes:15969 (15.5 KiB)

~# cd /etc/ax_irutool/demoAP_152/

~# ./DemoServerOPCUA 1 3088



1.3 Connect to OPC UA server by host PC (Ubuntu).

~\$ opcua-client

😑 🗇 💮 🛛 FreeOpcUa Client



If connection is successful, the information below will appear.

opc.tcp://10.1.70.212:3088	• Connect options Connect Disconnect
DisplavName BrowseName Nodeld	Attributes
angengrianne ananteerne riesena	Attribute A Value DataType
	Refresh
	Graph Ø 🖲
	Number of Points 30 Intervall [5] 5 Apply
	0.0
	0.4
	0.2
	0 0.2 0.4 0.6 0.8 1
	<u>E</u> v S <u>u</u> bscripti <u>R</u> efere <u>G</u> r
	2 8



See StreeOpcUa Client				
opc.tcp://10.1.70.212:3088	•	Connect options	Connect	Disconnect

Set Connect options as below

😣 🗉 ConnectionDialog					
Query server cap	pability				
Security Policy	None ‡				
Message Security Mode	None ‡				
	Select certificate				
	Select private key				
	Close				

Click Connect. You will see the information below.

😝 🗇 💿 FreeOpcUa Client										
opc.tcp://10.1.70.212:3088							•	Connect options	Connect	Disconnect
DisplavName	BrowseName	Nodeld		Attribute	s					@ 8
Volter Volte	0:Root 0:Objects 0:Server 1:Get_Al_Si 1:Get_DI_C 1:Get_DO 1:Set_DO 1:Set_DI_C 1:Set_DO 1:Set_DO	Initial Initial Initial <		Attribu	te 🔺 Valu	e	DataType			
 Types Views 	0:Types 0:Views	1=80 i=87		Graph						Refresh
				Number	of Points	30	Cintervall [s]	5		Apply
				0.6						
				0.4						
				0.2						
				Ev	Subscripti.	0.2	0.4	0.6	0.8	1
uaclient.uaclient - INFO - Connecti	ng to opc.tcp://1	0.1.70.212:3088 with parameters None, N	None, None, None')							8 8

- 3. Function demo
 - 1.1 Set_AI

Right click the "Set_AI" item.

DisplayName	BrowseName	Nodeld	
 ▼ ■ Root ▼ ■ Objects ▶ ● Server ▶	0:Root 0:Objects 0:Server 1:Get_Al_Si 1:Get_DI_C 1:Get_DI_S 1:Get_DO	i=84 i=85 i=2253 ns=1;s=Get_AI_Singlevalue ns=1;s=Get_DI_Counter ns=1;s=Get_DI_Status ns=1;s=Get_DO_Status	
 ► (x) Set_AI ► (x) Set_DI_Counter ► (x) Set_DO_PWM ► (x) Set_DO_Status ► Tupos 	1:Set_AI 1:Set_DI_C 1:Set_DO_ 1:Set_DO_ 0:Types	ns=1:s=Set Al Copy Path Copy Nodeld Call	
▶ Views	0:Views	Subscribe to data change Unsubscribe to DataChange Subscribe to events Unsubscribe to Events Add to Graph	Ctrl+G

Click "Call", and you will see the information below.

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😸 🗊 UA Method Call						
Input Arguments:						
Name:Set_AI_Channel Data	Name:Set_AI_Channel Data type:Int32 Description:Channel(1-15)					
Name:Set_Al_InputRange Da	ta type:Int32 Description:InputRange(0-3)					
Result:	None					
Output Arguments:						
Data Type: Int32	Value:					
Data Type: Int32	Value:					
	Close Call Method					

Please input AI Channel number and input range, then click "Call Method". If succeeeful, you will see the information below.

😣 🗉 UA Method Call								
Input Arguments:								
Name:Set_AI_Channel Data ty	Name:Set_AI_Channel Data type:Int32 Description:Channel(1-15) 15							
Name:Set_Al_InputRange Dat	a type:Int32 Description:Input	Range(0-3) 3						
Result:	StatusCode(G	ood)						
Output Arguments:								
Data Type: Int32	Value:	0						
Data Type: Int32	Value:	0						
		Close Call Method						

Result : OPC UA server response code

Output Arguments :

Output0 : Set AI channel function response.

Output1 : Set AI input range function response.

1.2 Get_AI_SingleValue

Click the "Get_AI_SingleValue" item, and you will see the AI single value in the Attributes.

DisplayName	BrowseName	Nodeld	Attribute	5		8.6
* 🔳 Root	0:Root	ix84	Attribu	te A Value	DataType	6
 Dbjects Server 	0:Objects 0:Server	i=85 i=2253	Node	Id ns=1;s=Get_AL_Singlevalue	Nodeld	
Get_AI_Singlevalue Get_DI_Counter	1:Get_AI_SI 1:Get_DI_C	ns=1;s=Get_Al_Singlevalue ns=1;s=Get_Dl_Counter	User Valu	WriteV	Uint32 Double	
Get_DI_Status Get_DO_Status	1:Get_DI_S 1:Get_DO	ns=1;s=Get_DI_Status ns=1;s=Get_DO_Status	P V3	lue [-0.57769775390625, -0.69976806640625, -1.0107 Iver 11 None	A21875, 0.0921630859375j LBC of Double Decertime	1
(x) Set_Al (x) Set_DI_Counter (x) Set_DO_PWM	1:5et_DI_C 1:5et_DI_C	ns=1;s=Set_Al ns=1;s=Set_DI_Counter ns=1:s=Set_DO_PWM	So Valu	urce Ti 2018-07-24T01:56:38.341837 :Rank OneDimension	DateTime Int32	1
 (x) Set_DO_Status 	1:Set_DO	ns=1;s=Set_DO_Status	Write	Mask	UInt32	ě

1.3 Set_DO_Status

Right Click the "Set_DO_Status" item.

DisplayName	BrowseName	Nodeld
 Root Objects Get_AI_Singlevalue Get_DI_Counter Get_DO_Status Get_DO_Status (x) Set_AI (x) Set_DO_DVIM 	0:Root 0:Objects 0:Server 1:Get_Al_Si 1:Get_Dl_S 1:Get_Dl_S 1:Get_DO 1:Set_Al 1:Set_DD_C	<pre>i=84 i=85 i=2253 ns=1;s=Get_AI_Singlevalue ns=1;s=Get_DI_Counter ns=1;s=Get_DO_Status ns=1;s=Get_DO_Status ns=1;s=Set_AI ns=1;s=Set_AI ns=1;s=Set_DI_Counter ns=1;s=Set_DI_Counter</pre>
 ▶ (x) Set_DO_Status ► Types ► Views Cop Call Sub Uns 	py Path by Nodeld scribe to data cl subscribe to Data scribe to <u>e</u> vents	hange aChange s nts
Add	l to <u>G</u> raph	Ctrl+G

Click "Call", and you will see the information below.

😣 🗊 UA Method Call						
Input Arguments:						
Name:Set_DO_Channel Data type:Int32 Description:Channel(1-3)						
Name:Set_DO_Level Data ty	vpe:Int32 Description:Level(1-3)					
Result:	None					
Output Arguments:						
Data Type: Int32	Value:					
	Close Call Method					

Set the Channel number and Input level, then click "Call Method". if successful, you will see the information below.

😕 🗊 UA Method Call						
Input Arguments:						
Name:Set_DO_Channel Data type:Int32 Description:Channel(1-3) 3						
Name:Set_DO_Level Data	type:Int32 Desc	ription:Level(1-3) 3				
Result:		StatusCode(Good)				
Output Arguments:						
Data Type: Int32	Value:	0				
		Close Call Method				

Result : OPC UA server response code

Output Arguments :

Output0 : Set DO status function response.

1.4 Get_DO_Status

Click the "Get_DO_Status" item, and you will see the DO status value in the Attributes.

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					Attributor	
D	isplayName	BrowseName	NodeId	-		
1	Root	0:Root	i=84		Attribute 🔺 Value	DataType
	🔻 🔳 Objects	0:Objects	i=85		Nodeld ns=1:s=Get DO Status	Nodeld
	🕨 🛑 Server	0:Server	i=2253		UserAccessI CurrentRead	Byte
	Get_AI_Singlevalue	1:Get_AI_Si	ns=1;s=Get_AI_Singlevalue		UserWriteN	UInt32
	Get_DI_Counter	1:Get_DI_C	ns=1;s=Get_DI_Counter		▼ Value	Int32
	Get_DI_Status	1:Get_DI_S	ns=1;s=Get_DI_Status		Value 3	Int32
	🕨 🚍 Get_DO_Status	1:Get_DO	ns=1;s=Get_DO_Status		Server Ti None	DateTime
	▶ (x) Set_AI	1:Set_AI	ns=1;s=Set_AI		Source T 2018-07-24T02:0 :59 290774	DateTime
	(x) Set_DI_Counter	1:Set_DI_C	ns=1;s=Set_DI_Counter		ValuePank Any	Int32
	▶ (x) Set DO PWM	1:Set DO	ns=1;s=Set DO PWM		WriteMask	HIDE22
	▶ (x) Set_DO_Status	1:Set_DO	ns=1;s=Set_DO_Status		WITCHIGK	0111152

1.5 Get_DI_Status

Click the "Get_DI_Status" item, and you will see the DI status value in the Attributes.

DisplayName	BrowseName	Nodeld	Attributes	
 ▼ Root ▼ Objects ▶ Server ▶ Get_Al_Singlevalue ▶ Get_D_Counter ▶ Get_D_Status > ⊗ Get_D_Status > (x) Set_Al > (x) Set_D_I_Counter > (x) Set_D_D_PWM > (x) Set_D_O_Status 	0:Root 0:Objects 0:Server 1:Get_Al_Si 1:Get_Dl_C 1:Get_DL_S 1:Get_DO 1:Set_Al 1:Set_DL_C 1:Set_DO	i=84 i=85 i=2253 ns=1;s=Get_Al_Singlevalue ns=1;s=Get_Dl_Status ns=1;s=Get_Dl_Status ns=1;s=Get_DO_Status ns=1;s=Set_Al ns=1;s=Set_DD_PWM ns=1;s=Set_DO_Status	Attribute A Value Nodeld ns=1;s=Get_DI_Status UserAccessiCurrentRead UserWriteM Value Value Server Ti None Source Ti 2018-07-24T02:16:16.973058 ValueRank Any WriteMask	DataType Nodeld Byte UInt32 Int32 DateTime DateTime Int32 UInt32

1.6 Set_DO_PWM

Right click the "Set_DO_PWM item".

DisplayName	BrowseName	Nodeld		
 Root Objects Server Get_Al_Singlevalue Get_DI_Counter Get_DI_Status Get_DO_Status (x) Set_Al (x) Set_DI_Counter 	0:Root 0:Objects 0:Server 1:Get_AI_Si 1:Get_DI_C 1:Get_DI_S 1:Set_AI 1:Set_DI_C	i=84 i=85 i=253 ns=1;s=Get_AI_Singlevalue ns=1;s=Get_DI_Counter ns=1;s=Get_DI_Status ns=1;s=Get_DO_Status ns=1;s=Set_AI ps=1:s=Set_DI_Counter		
▶ (x) Set_DO_PWM ▶ (x) Set_DO_Status ▶ ■ Types ▶ ■ Views	Copy Path Copy NodeId			
	Subscribe to data change Unsubscribe to DataChange Subscribe to events Unsubscribe to Events Add to Graph Ctrl+G			

Click "Call", and you will see the information below.

😣 🗊 UA Method Call	
Input Arguments:	
Name:Set_DOPWM_Duty Dat	a type:Int32 Description:Duty Cycle(1-99%)
Name:Set_DOPWM_Frequenc	e Data type:Int32 Description:Frequence(1-500)
Result:	None
Output Arguments:	
Data Type: Int32	Value:
	Close Call Method

Set duty cycle and frequence, then click "Call Method". If successful, you will see

the information below.

😣 🗉 UA Method Call			
Input Arguments:			
Name:Set_DOPWM_Duty_Data type:Int32_Description:Duty Cycle(1-99%)			
Name:Set_DOPWM_Frequence_Data type:Int32_Description:Frequence(1-500) 500			
Result:	Statu	usCode(Good)	
Output Arguments:			
Data Type: Int32	Value:	0	
		Close Call Method	



Output Arguments :

Output0 : Set DO PWM function response.

If you want to stop DO PWM mode, set duty cycle and frequency as 0, then click "Call Method". If successful, you will see the information below.

😣 回 UA Method Call			
Input Arguments:			
Name:Set_DOPWM_Duty Data type:Int32 Description:Duty Cycle(1-99%)			
Name:Set_DOPWM_Frequence Data type:Int32 Description:Frequence(1-500)			
Result:	StatusCode(Good)		
Output Arguments:			
Data Type: Int32	Value:	0	
		Close Call Method	

1.7 Set_DI_Counter

Right click the "Set_DI_Counter" item.

DisplayName	BrowseName Nodeld	
 Root Objects Server Get_Al_Singlevalue Get_DL_Counter Get_DL_Status Get_DO_Status (x) Set_Al 	0:Root i=84 0:Objects i=85 0:Server i=2253 1:Get_Al_Si ns=1;s=Ge 1:Get_Dl_C ns=1;s=Ge 1:Get_DL_S ns=1;s=Ge 1:Get_DD ns=1;s=Ge 1:Set_Al ns=1;s=Se	et_AI_Singlevalue et_DI_Counter et_DI_Status et_DO_Status t AI
	Copy Path Copy Nodeld Call	M IUS
	Subscribe to data change Unsubscribe to DataChange Subscribe to events Unsubscribe to Events Add to Graph	Ctrl+G

Click "Call", and you will see the information below.

😣 💷 UA Method Call		
Input Arguments:		
Name:Set_DICounter_Condition Data type:Int32 Description:Trigger condition(0-2)		
Name:Set_DICounter_Counter Data type:Int32 Description:Counter(0-65535)		
Result:	None	
Output Arguments:		
Data Type: Int32	Value:	
	Close Call Method	

Set condition and counter number, then click "Call Method". If successful, you will see the information below.

😣 🗉 UA Method Call		
Input Arguments:		
Name:Set_DICounter_Condition Data type:Int32 Description:Trigger condition(0-2) 2		
Name:Set_DICounter_Counter Data type:Int32 Description:Counter(0-65535) 5000		
Result:	StatusCode(Good)	
Output Arguments:		
Data Type: Int32	Value:	0
		Close Call Method

Result : OPC UA server response code

Output Arguments :

Output0 : Set DI counter function response.

1.8 Get_DI_Counter

Click the "Get_DI_Counter" item, and you will see the DI counter value in the Attributes.

DisplayName	BrowseName	Nodeld	Attributes	
 ▼ ■ Root ▼ ■ Objects > ■ Server > ■ Get_Al_Singlevalue > ■ Get_D_Counter > ■ Get_D_Status > ■ Get_D_Status > ■ Get_D_Status > ■ Get_D_Status > (x) Set_Al > (x) Set_D_Counter > (x) Set_DO_PWM > (x) Set_DO_Status 	0:Root 0:Objects 0:Server 1:Get_Al_Si 1:Get_DI_S 1:Get_DO 1:Set_Al 1:Set_DI_C 1:Set_DO 1:Set_DO 1:Set_DO	I=84 I=85 I=2253 ns=1;s=Get_OL_Counter ns=1;s=Get_DL_Status ns=1;s=Get_DD_Status ns=1;s=Get_AL ns=1;s=Set_AL ns=1;s=Set_DD_PWM ns=1;s=Set_DD_Status	Attribute Value Nodeld ns=1;s=Cet_DI_Counter UserAccessI CurrentRead UserWriteW Value Value 4840 Server Ti None Source Ti 2018-07-24T02:32:29.946352 ValueRank Any WriteMask	DataTypeNodeldByteUlnt32Int32Int32DateTimeDateTimeInt32Ulnt32

APPENDIX A Error Code

Error Code List

Error Code	Error Name	Description
0x00000000	AXIO_OK	Success
0xE0000001	AXIO_ERR_HANDLE	An invalid handle
0xE0000002	AXIO_ERR_CMD	A command operation failure
0xE0000003	AXIO_ERR_PARAMETERS	Incorrect input parameters
0xE0000004	AXIO_ERR_NOT_SUPPORTED	The feature is not supported
0xE0000005	AXIO_ERR_RESPN_TIMEOUT	The command response is timeout
0xE0000006	AXIO_ERR_RESPN_MCU	An error response from MCU