




ezTCP Technical Documents

SIG series product application

Version 1.0

 ***Caution: Specifications of this document may be changed without prior notice for improvement.***

Sollae Systems Co., Ltd.

<https://www.eztcp.com>

목차

1	Overview	- 2 -
2	Applications.....	- 3 -
2.1	Combination of SIG-5430 and SIG-5600	- 3 -
2.1.1	<i>System Diagram</i>	- 3 -
2.1.2	<i>Setting Example.....</i>	- 3 -
2.2	Combination of SIG-5440 and SIG-5600	- 4 -
2.2.1	<i>System Diagram</i>	- 4 -
2.2.2	<i>Setting example</i>	- 4 -
2.3	Combination of SIG-5600	- 5 -
2.3.1	<i>System Diagram</i>	- 5 -
2.3.2	<i>Setting Example.....</i>	- 6 -
2.4	Combination of SIG-5430 and SIG-5450	- 7 -
2.4.1	<i>System Diagram</i>	- 7 -
2.4.2	<i>Setting example</i>	- 7 -
2.5	Combination of SIG-5440 and SIG-5450	- 8 -
2.5.1	<i>System Diagram</i>	- 8 -
2.5.2	<i>Setting example</i>	- 8 -
2.6	Combination of SIG-5600 and SIG-5450	- 9 -
2.6.1	<i>System Diagram</i>	- 9 -
2.6.2	<i>Setting example</i>	- 9 -
3	Revision History.....	- 10 -

1 Overview

Sollae Systems' SIG series products support Modbus/TCP protocols. The Modbus/TCP protocol basically consists of a master and a slave. You can configure 1:1 or N:M connections between controllers by setting the products as master and slave respectively. The following is a list of products.

Product	Number of Port			Master	Slave	Multiple-connections (Max.)
	Digital		Analog			
	Input	Output	Input			
SIG-5430	0	0	4	NOT Support	Support	Support (4)
SIG-5440	4	0	0	NOT Support	Support	Support (4)
SIG-5450	0	2	0	Support	Support	Support (4)
SIG-5600	4	4	4	Support	Support	Support (4)

Table 1-1 product list

The value of the digital input port of one device or the analog 1-bit ADC value can be reflected in the digital output port of the other device.

The analog value of SIG-5430 can be replaced by 1-bit ADC to configure an Internet switch. If the analog value changes larger than the set value (High Ref.), the 1-bit ADC value changes to 1, and if the analog value changes smaller than the set value (Low Ref.), the 1-bit ADC value changes to 0.

Digital output is basically synchronized with the input port, so when the input is ON, the output changes to ON, and when the input is OFF, the output changes to OFF. When the pulse mode of the output port is activated, when the input port is turned on, the output port is pulse controlled according to the set pulse mode. While controlling in pulse mode, another control signal request is ignored.

When using the product in N:M, input and output are OR operated. In other words, even if only one input port is turned on, the output port is turned on.

2 Applications

2.1 Combination of SIG-5430 and SIG-5600

The analog 1-bit ADC value of SIG-5430 is reflected in the digital output port of SIG-5600. To use multiple products, you must set the "Multiple Connection" setting to "Enable".

Product	SIG-5430(Slave)	SIG-5600(Master)	Note
Number of Products	1 ~ 4	1 ~ 4	Maximum 4:4

Table 2-1 possible cases

2.1.1 System Diagram

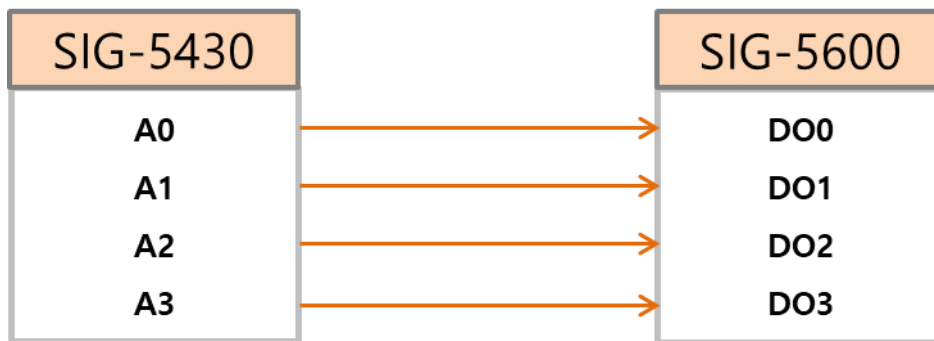


Figure 2-1 control of master's output ports

2.1.2 Setting Example

Variable	SIG-5430	SIG-5600
IP Address	192.168.0.30	192.168.0.60
Modbus Type	Slave	Master
Connection Mode	TCP Server	TCP Client
Peer Address	-	192.168.0.30
Port	502	502
1-bit ADC	Enable	-
High Ref.	1 if greater than analog value	-
Low Ref.	0 if less than analog value	-

Table 2-2 setting example

2.2 Combination of SIG-5440 and SIG-5600

The digital input port value of SIG-5440 is reflected in the digital output port of SIG-5600. To use multiple products, you must set the "Multiple Connection" setting to "Enable".

Product	SIG-5440(Slave)	SIG-5600(Master)	Note
Number of Products	1 ~ 4	1 ~ 4	Maximum 4:4

Table 2-3 possible cases

2.2.1 System Diagram

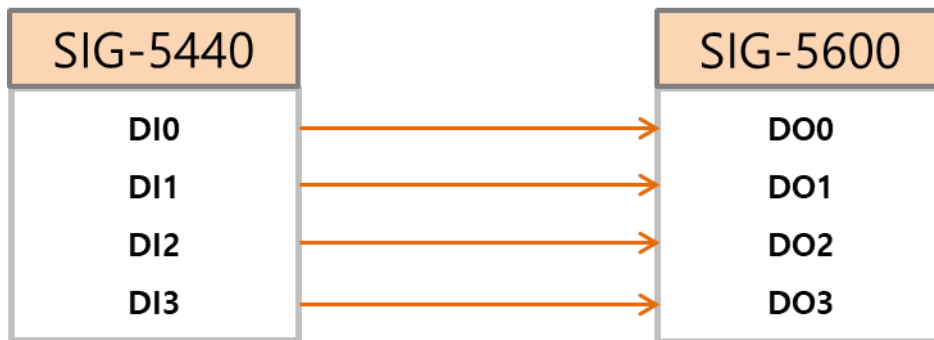


Figure 2-2 control of master's output ports

2.2.2 Setting example

Variable	SIG-5440	SIG-5600
IP Address	192.168.0.40	192.168.0.60
Modbus Type	Slave	Master
Connection Mode	TCP Server	TCP Client
Peer Address	-	192.168.0.40
Port	502	502

Table 2-4 setting example

2.3 Combination of SIG-5600

The digital input port value of SIG-5600 (slave) or analog 1-bit ADC value is reflected in the digital output port of SIG-5600 (master). Additionally, the digital input port value or analog 1-bit ADC value of SIG-5600 (master) is also reflected in the output port of SIG-5600 (slave). When the analog 1-bit ADC is activated, the digital input port value is not reflected, and the 1-bit ADC value is reflected in the other SIG-5600's output port. To use multiple products, you must set the "Multiple Connection" setting to "Enable".

Product	SIG-5600(Slave)	SIG-5600(Master)	Note
Number of Products	1 ~ 4	1 ~ 4	Maximum 4:4

Table 2-5 possible cases

☞ ***In this setup, if there is more than one master, the output of the slave is controlled by the input event of the last master.***

2.3.1 System Diagram

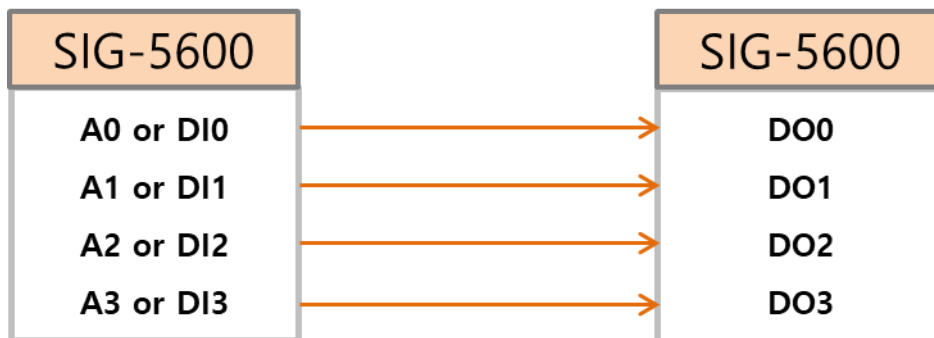


Figure 2-3 control of master's output ports

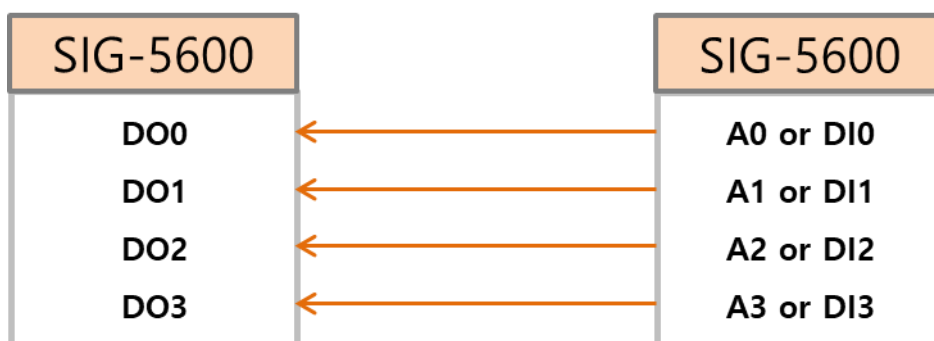


Figure 2-4 control of slave's output ports

2.3.2 Setting Example

Variable	SIG-5600(Slave)	SIG-5600(Master)
IP Address	192.168.0.70	192.168.0.60
Modbus Type	Slave	Master
Connection Mode	TCP Server	TCP Client
Peer Address	-	192.168.0.70
Port	502	502
1-bit ADC	Option	Option
High Ref.	1 if greater than analog value	1 if greater than analog value
Low Ref.	0 if less than analog value	0 if less than analog value

Table 2-6 setting example

2.4 Combination of SIG-5430 and SIG-5450

The analog 1-bit ADC value of SIG-5430 is reflected in the digital output port of SIG-5600. Since the SIG-5450 has two digital output ports, only A0 and A1 are reflected in the analog ports of the SIG-5430. To use multiple products, you must set the "Multiple Connection" setting to "Enable".

Product	SIG-5430(Slave)	SIG-5450(Master)	Note
Number of Products	1 ~ 4	1 ~ 4	Maximum 4:4

Table 2-7 possible cases

2.4.1 System Diagram

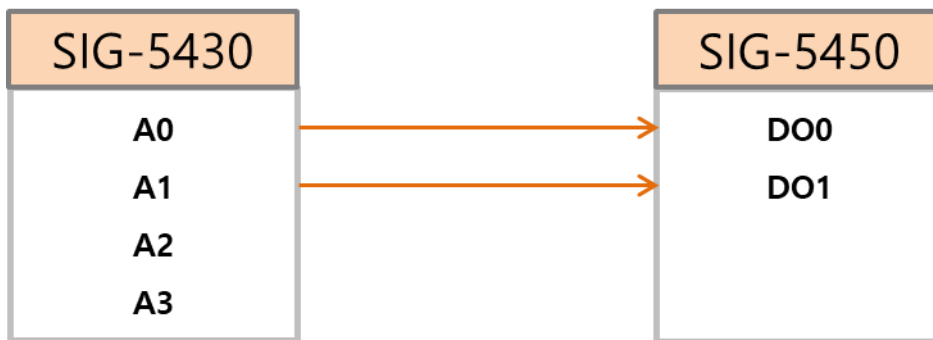


Figure 2-5 control of master's output ports

2.4.2 Setting example

Variable	SIG-5430	SIG-5450
IP Address	192.168.0.30	192.168.0.50
Modbus Type	Slave	Master
Connection Mode	TCP Server	TCP Client
Peer Address	-	192.168.0.30
Port	502	502
1-bit ADC	Enable	-
High Ref.	1 if greater than analog value	-
Low Ref.	0 if less than analog value	-

Table 2-8 setting example

2.5 Combination of SIG-5440 and SIG-5450

The digital input port value of SIG-5440 is reflected in the digital output port of SIG-5450. Since the SIG-5450 has two digital output ports, only DI0 and DI1 are reflected in the digital input ports of the SIG-5440. To use multiple products, you must set the "Multiple Connection" setting to "Enable".

Product	SIG-5440(Slave)	SIG-5450(Master)	Note
Number of Products	1 ~ 4	1 ~ 4	Maximum 4:4

Table 2-9 possible cases

2.5.1 System Diagram



Figure 2-6 control of master's output ports

2.5.2 Setting example

Variable	SIG-5440	SIG-5450
IP Address	192.168.0.40	192.168.0.50
Modbus Type	Slave	Master
Connection Mode	TCP Server	TCP Client
Peer Address	-	192.168.0.40
Port	502	502

Table 2-10 setting example

2.6 Combination of SIG-5600 and SIG-5450

The digital input port value of SIG-5600 or the analog 1-bit ADC value is reflected in the digital output port of SIG-5450. When the analog 1-bit ADC is activated, the digital input port value is not reflected, and the 1-bit ADC value is reflected in the output port of SIG-5450. Since the SIG-5450 has two digital output ports, only the analog ports A0 and A1 or the digital input ports DI0 and DI1 of the SIG-5600 are reflected. To use multiple products, you must set the "Multiple Connection" setting to "Enable".

Product	SIG-5600(Slave)	SIG-5450(Master)	Note
Number of Products	1 ~ 4	1 ~ 4	Maximum 4:4

Table 2-11 possible cases

2.6.1 System Diagram



Figure 2-7 control of master's output ports

2.6.2 Setting example

Variable	SIG-5600(Slave)	SIG-5450(Master)
IP Address	192.168.0.60	192.168.0.50
Modbus Type	Slave	Master
Connection Mode	TCP Server	TCP Client
Peer Address	-	192.168.0.60
Port	502	502
1-bit ADC	Option	-
High Ref.	1 if greater than analog value	-
Low Ref.	0 if less than analog value	-

Table 2-12 setting example

3 Revision History

Date	Version	Description	Author
2024.06.17	1.0	○ Initial release	Peter Lee