PC Software for the SiO Controller

Instruction Manual

Rev. 3.72 For *SiO-Programmer* Ver. 3.72

 \bigcirc SUS Corporation 2023

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Thank you for choosing *SiO-Programmer*.

You must accept the following terms and conditions to use *SiO-Programmer*, a software program developed by SUS Corporation (hereinafter referred to as "SUS"). If you do not accept these terms and conditions, please remove *SiO-Programmer* from your computer immediately.

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- 2. The copyright on *SiO-Programmer* is held by SUS.
- 3. You are the only person entitled to use *SiO-Programmer*. In addition, you may only use it for your own business purposes with SUS's *SiO controller*.
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- 6. If you breach any of these terms, or if there are serious circumstances that make it difficult to continue this agreement, SUS may immediately terminate the license.
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SiO-Programmer Disclaimer

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Introduction

SiO-Programmer is PC software that supports SUS Corporation's *SiO controller*.

SiO-Programmer allows you to write program data and parameters to the *SiO controller* easily and efficiently. You can also save your edited data to a file or print it.

You will find that this software makes the SiO controller easier to use.

This instruction manual covers SiO-Programmer version 3.71. The version number of SiO-Programmer you are using can be found in the upper-left corner of the SiO-Programmer screen. (→ Page 13) If you are using SiO-Programmer version 2.00 or earlier, refer to SiO-Programmer Instruction Manual Rev. 1.xx.

The information in this manual is subject to change without notice due to product improvement. For the latest information, please visit our website at: http://www.sus.co.jp/

Precautions for use

- <u>Be sure to turn off the *SiO controller*</u> before connecting a communication cable to or disconnecting it from your computer with *SiO-Programmer* installed.
- To transmit data between the *SiO controller* and your computer, use the USB cable specified by SUS.
- Do not turn off the *SiO controller* during data communication between the controller and your computer. Also, be sure to connect the USB cable securely to prevent it from coming off during data communication.
- If you are using a USB flash drive to save data, **do not unplug it while the software is running**.
- Do not press any button repeatedly fast when writing program data, forcing output via the I/O monitor, or performing other tasks. Doing so may stop the communication.

Overview

Here is a brief overview of the features supported by *SiO-Programmer*.

Editing programs

You can edit program data. Your edited data can be saved to a file or printed.

In addition, the data can be read, written, or collated via communication.

Setting parameters

You can edit the maximum values of hardware timers, ON/OFF cycle settings, and other parameters.

Monitoring

You can monitor the I/O status. The output status can be forced on or off. In addition, changes in the I/O status can be saved to a CSV file.

◆ Simulator

The program data you enter can be simulated on your computer. The simulator allows you to check inputs and outputs before connecting your computer to the SiO controller.

System requirements

The following environment is required to run *SiO-Programmer*.

Supported computer models

This software has been verified to run on computers installed with any of the following operating systems:

Windows 7	(32/64-bit version)
Windows 8	(32/64-bit version)
Windows 8.1	(32/64-bit version)
Windows 10	(32/64-bit version)
Windows 11	(64-bit version)

*: Even on these operating systems, *SiO-Programmer* may not work properly, depending on your computer model.

CPU and memory

 $2~\mathrm{GHz}$ or faster CPU, $4~\mathrm{GB}$ or more of system memory recommended

Hard disk space

 $512\ \mathrm{MB}$ or more of free space

◆ Display

Resolution: 1280×768 or more Colors: 256 or more



USB 2.0 port

Installing SiO-Programmer

You need to install *SiO-Programmer* on your computer's hard disk before you can use it. Quit all other applications before installing SiO-Programmer.

If your computer already has *SiO-Programmer* over version 2.xx, you can update it <u>simply by</u> <u>running Setup.exe.</u>

Here is how to install *SiO-Programmer*:



5	When the setup wizard appears, click the [Next] button.	SIO_PROGRAMMER Ver3.00E - InstallShield Wizard Wekcome to the InstallShield Wizard for SIO_PROGRAMMER Ver3.00E The InstallShield(R) Wizard will allow you to modify, repair, or remove SIO_PROGRAMMER Ver3.00E. To continue, dick Next. Click Canceling.org
6	 Read the SiO-Programmer license agreement and accept the terms and conditions. Then click [Next]. * If you do not accept the terms and conditions, you cannot proceed with the installation. 	SIO_PROGRAMMER Ver3.00E - InstallShield Wizard Vicense Agreement Please read the following license agreement carefully. SIO-PROGRAMMER License Agreement Thank you for choosing SIO-PROGRAMMER. The following agreement must be agreed to use Software program, SIO-PROGRAMMER, developed by SUS Corporation (hereinafter referred to as SUS). Unless the agreement was made, the SIO-PROGRAMMER must be uninstalled from User's agreement in the license agreement I do not accept the terms in the license agreement I do not accept the terms and conditions, and then click the [Next] button.
7	Enter your user name and organization name, and then click the [Next] button.	SIO_PROGRAMMER Ver3.00E - InstallShield Wizard
	By default, a folder named "SIO_PROGRAMMER###" is created in the "Program Files" folder as the installation location, where the program is installed. To use the default folder, click the [Next] button. To use a different folder, click the [Change] button and specify the desired folder. * The "###" represents the version number.	SIO_PROGRAMMER Ver3.00E - InstallShield Wizard Destination Folder Click Next to install to this folder, or click Change to install to a different folder. Click This SIO_PROGRAMMER Ver3.00E to: C:\#Program Files (x86)\#SIO_PROGRAMMER Ver3.00E\# Click this button if you want to change the installation location. Click InstallShield <back next=""> Cancel</back>



Uninstalling SiO-Programmer

The process of removing files and other data from a computer's hard disk is called uninstallation. Here is how to uninstall *SiO-Programmer* from your computer's hard disk:

1	Click the Start button > [Control Panel] to open the Control Panel.	Pictures Music Computer Control Panel Device Click Help and Support Search programs and files
2	Click [Uninstall a program] .	Image: Control Panel Image: Control Panel Adjust your computer's settings Verw Image: Control Panel Image: Control Panel Image: Control Pan
3	Select " <i>SiO-Programmer</i> ", right-click it, and then select [Uninstall] .	Control Pand + Programs + Programs and Features + 4y Search Programs and Features P Control Pand Home Uninstall or change a program To uninstall or control. Cognice - Bit - Cognice - Bit - Cognice - Bit - Cognice - Cognice - Bit - Cognice
4	 Uninstall the device driver. To do so, select "Windows Driver Package - SUS Corporation. (WinUSB) SiOController", right-click it, and then select [Uninstall]. * If the above driver is not displayed and "Windows Driver Package D:Frontia (WinUSB) USBTMCd" exists, uninstall this driver instead. 	Control Pand + Programs and Features
		$Right-click \rightarrow Uninstall$

Setting up the SiO controller

Follow the steps below to set up the SiO controller.



Connecting a USB cable

Computer side

Install SiO-Programmer and its software driver before connecting the controller to your computer. (\rightarrow Page 7)

After installing them, connect the Type A connector of the USB cable to the USB port on your computer.

* Only one SiO controller can be used with one computer.

Controller side

Connect the micro-USB connector of the USB cable to the SiO controller. Be sure to gently insert the connector while holding the controller with your hand.

If the cable is connected correctly, the device driver is installed properly, making your computer and the controller ready to communicate with each other.

* After USB communication, disconnect the power cable of the controller body, turn off the power, and then disconnect the USB cable.

Starting SiO-Programmer

Once the installation is complete, a shortcut icon for *SiO-Programmer* is created in the Start menu. Click the icon to start *SiO-Programmer*.

If you used the default folder during installation, the icon is stored in the following location: [Start Menu] > [Programs] > [SIO_PROGRAMMER]



Program Window

• This section shows the names of the screen elements and describes their functions.



(5) Notes \rightarrow Page 26

The note fields allow you to take notes about inputs and outputs. (You can enter notes for New/Old Multiple-Selection conditions in the [PARAMETER] area.) The notes you enter here are reflected in the program, I/O monitor, and simulator windows. A note can contain up to 16 alphanumeric characters and double-byte characters.

Tool Icons

N IT					CONDI	TON1				DURA	ATION TIM	E(UNTIL)		OUTPUT TYPE	
/01		1		2			STATE			1		2		OUTFOLTTE	
vample)	INI	ИО	AND	IN2		THEN	DELAYTIME	1.0 slater	IND	Turn ON	OR	DELAY TIME	5.0 sec) ^
un	-			-		THEN	D-TIME 0.0	÷ bi	er CONDITION	Tum OFF		-	-	ON	
UT2	-	<u> </u>	ل	-	<u>ا</u>	THEN	D-TIME 0.0	🔹 lat	er CONDITION	Tum OFF	<u> </u>			ON	
JTS	-	<u> </u>		-	<u> </u>	THEN	D-TIME 0.0	0 lot	CONDITION	Turn OFF				ON	
JT4	-	<u> </u>	Ŀ	-	Ŀ	THEN	D-TIME 0.0	D lat		Turn OFF	<u> </u>	<u> </u>	<u> </u>	ON	
JT5	-	<u> </u>		-	<u> </u>	THEN	D-TIME 0.0	0	er CONDITION	Turn OFF			-	ON	~
AG1	-			-		THEN	D-TIME 00		CONDITION	Tum OFF				ON	^
AG2	-	-		-		THEN	D-TIME 00	e lot		Turn OFF	-	-		ON	
AG2	_					TUCK		· lot		Tum OFF				011	
N C	NPUT MEN	D Reset			UT MEMO2 1 2 3 4	NAME	Achtroller READ	a MEMO> FLAG EI 1 2 3 4	FL/G MEMO Ruse		~	Paramete Paramete HARD T1 ON& No.	TERO PARAMETERI Mew Multi Selec TIMER MAX (5.0x 5.0 pec OFF ALTERNATION ON TIME	Read Ct SiOt series only Ok so-60000sec] T2 5.0 sec N [02sec-1000sec(DH=O) OFF TIME	d M ()
							🗹 In	oluding M	EMO						
		c	2	-						4.		1			

(1) New

Discards the current program, notes, parameters, and other settings, and restores the default settings.

It is recommended to save your settings to a file before clicking this icon, as discarded settings cannot be restored.

(2) Open

Opens a saved configuration file. Selecting a configuration data file (*.sio) reflects the settings saved in the file on the window.

- * You can also open an SiO file by dragging and dropping it.
- * An SiO file saved in a different version of SiO-Programmer may not open. See page 18 for more details.

(3) Save 🗖

Saves the current settings. The extension of the configuration file is ".sio". If you name the file "sample", it is saved under the name "sample.sio".

(4) Undo 🎦

Restore the currently program, notes, parameters, and other settings. This function can be performed up to 20 times.

(5) Redo 🦰

It's possible to cancel the undo. This function can use only the number of times which undo.

(6) Simulator

Starts the simulator (\rightarrow Page 47).

The simulator allows you to check how the program you created works.

* You can use the simulator without connecting your computer and the SiO controller.

(7) I/O monitor 🔘

Starts the I/O monitor (\rightarrow Page 45).

You can check the I/O status and switch the output status on or off.

In addition, changes in the I/O status can be saved to a CSV file.

 \ast To use the I/O monitor, you need to connect your computer and the SiO controller.

(8)Search and Replace 🝳

Display search and replace window (\rightarrow Page.48) Search:

The same I/O as the selected search word becomes yellow.

Replace:

The same I/O as the selected search word replaced with the replaced word.

If there is a multi select which setted Search word, that setting is replaced.

(9) Compare 🖻

Compares the current settings in SiO-Programmer with the settings on the connected SiO controller or in an sio data file.

Any differences are highlighted in red.

* To compare the current settings with the settings on the SiO controller, connect your computer and the controller to allow communication between them.

(10) Print

Prints the settings window.

(11) Help 🧲

Displays this manual in PDF format. To view the manual, you must have Adobe Reader installed on your computer. Install it if necessary.

(12) Language selection ENGLISH -

Change the language as needed. Japanese and English, Chinese, Italy, Vietnamese, Thai are supported.

Shortcuts are available for some functions.

- New Ctrl + N
- Open Ctrl + O
- Save Ctrl + S
- Print Ctrl + P
- Undo Ctrl + Z
- Redo Ctrl + Y
- Cut Ctrl + X
- Copy Ctrl + C

- Paste Ctrl + V
- Reset Ctrl + R
- Insert Ctrl + Insert
- Delete Ctrl + Delete
- Search Ctrl + F
- Replace Ctrl + H

SiO Controller/SiO-Programmer Compatibility Table

 \blacksquare How to check the version of the SiO controller \blacksquare

The version of the SiO controller can be found on the back of the controller.

Note that the version of SiO-Programmer you can use differs depending on the controller to be used.

		S	SiO-Ccontrolle	er	SiO2, SiO Contr	3, SiO-N1 collers	SiO3.2, SiON3 Controllers	SiOt Controllers	SiOt1, SiOt3 Controllers	SiO2 R2 Controllers	SiON1 R2 Controllers
		Ver1.xx	Ver2.xx	Ver3.xx	Ver1.xx	Ver3.xx	Ver3.xx	Ver3.xx	Ver3.xx	Ver3.xx	Ver3.xx
	Ver1.xx	0	×	×	×	×	×	×	×	×	×
	Ver2.xx	×	0	×	0	×	×	×	×	×	×
	Ver3.00 -3.30	×	0	0	0	0	0	×	×	×	×
SiO-Programmer	Ver3.40 -3.41	×	0	0	0	0	0	0	×	×	×
	Ver3.50 -3.53	×	0	0	0	0	0	0	0	×	×
	Ver3.60 -3.62	×	0	0	0	0	0	0	0	0	×
	Ver3.70 -3.72	×	0	0	0	0	0	0	0	0	0

Compatibility of saved files between different versions of SiO-Programmer

Note that you cannot open saved files depending on the version of SiO-Programmer you are using, as shown below.

_	SiO-	Version that was used to create data files									
Pro	grammer	Ver1.xx	Ver2.00-2.10	Ver2.20-2.60	Ver3.00-3.31	Ver3.40-3.41	Ver3.50-3.53	Ver3.60-3.62	Ver3.70-3.72		
	Ver1.xx	0	×	×	×	×	×	×	×		
	Ver2.00-2.10	0	0	×	×	×	×	×	×		
	Ver2.20-2.60	0	0	0	×	×	×	×	×		
Voun voncion	Ver3.00-3.31	0	0	0	0	×	×	×	×		
four version	Ver3.40-3.41	0	0	0	0	0	×	×	×		
	Ver3.50-3.53	0	0	0	0	0	0	×	×		
	Ver3.60-3.62	0	0	0	0	0	0	0	×		
	Ver3.70-3.72	0	0	Ó	0	0	0	Ó	0		

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Editing Data

Window for creating programs

The [Output condition settings] area allows you to program the SiO controller. You can read program data from a file or the controller as well as create it.

The number of available outputs and internal outputs varies depending on the controller model.

■available outputs

• SiO3 / SiON3 / SiOt3 : 16 outputs

▼Output Condition settings Program Reset

OUT					COND	ITION1						
001	1			2			STATE	1				OUTFOIL TIPE
(Example)	INI	ON	AND	IN2	OFF	THEN	DELAYTIME 3.0 slater	IN3	ON OR	DELAYTIME	5.D sec	ON
OUT1						THEN	D-TIME 0.0 S later	CONDITION1 Turn	OFF –		-	ON
OUT2					-	THEN	D-TIME 0.0 🚖 ster	CONDITION1 Turn	OFF –	-		ON
OUT3	-	-	-	-] -]	THEN	vallable ou	Turn Turn	OFF –	-]	-	ON
OUT4	-	-	-	-	-	THEN	D-TIME 0.0 * ster	CONDITION1 Turn	OFF -	-	-	ON
OUT5						THEN	D-TIME 0.0 S later	CONDITION1 Turn	OFF -			ON
OUT6	-	-	-	-	-	THEN	D-TIME 0.0 A later	CONDITION1 Turn	OFF –	-	-	ON
	-	-	-	-	-]	THEN	D-TIME 0.0 * ster	CONDITION1 Turn	OFF -	-	-	ON
OUTS					-	THEN	D-TIME 0.0 × Ister	CONDITION1 Turn	OFF –	-		ON
OUT9						THEN	D-TIME 0.0 s later	CONDITION1 Turn	OFF -			ON
OUT10	-	-	-	-	-	THEN	D-TIME 0.0 1 Ister	CONDITION1 Turn	OFF -	-	-	ON
			-			THEN	D-TIME 0.0 * ster	CONDITION1 Turn	OFF –		-	ON
OUT12					-	THEN	D-TIME 0.0 × Ister	CONDITION1 Turn	OFF -	-		ON
	-	-	-	-	-]	THEN	D-TIME 0.0 * s	CONDITION1 Turn	OFF -	-	-	ON
OUT14	-	-	-	-	-	THEN	D-TIME 0.0 * Ister	CONDITION1 Turn	OFF –	-	-	ON
OUT15						THEN	D-TIME 0.0 × later	CONDITION1 Turn	OFF –			ON
OUT16	-	-	-	-	-	THEN	D-TIME 0.0 S later	CONDITION1 Turn	OFF -	-	-	ON

÷

• SiO2 / SiO2 R2 : 4 outputs

▼Output Condition settings (Program Reset

ſ	OUT					CONDI	ITION1			DURATION TIME(UNTIL)					
	001		1		2			1		2			OUTFOLTTPE		
	(Example)	INI	ON	AND	IN2	OFF	THEN	DELAYTIME 3.0 slater	IN3	ON	OR	DELAYTIME	5.0 sec	ON	
1	OUT1						THEN	D-TIME 0.0 s later	CONDITION1	Turn OFF				ON	
	OUT2					-	THEN		CONDITION1	Turn OFF				ON	
	OUT3	-		_	-] -]	THEN		CONDITIONI	Turn OFF	-		-	ON	
C	OUT4					-	THEN	D-TIME 0.0 S later	CONDITION1	Turn OFF				ON) -
ſ	FLAG1	_]]	_	_][-]		D-TIME 0.0 🚔 ster		Turn OFF	-	_	-	ON	
	FLAG2	-	-	-	-	-	The rest		iai out	puis.	-	-	-	ON	
								:							

+ SiO-C / SiO-N1 / SiOt1 / SiO-N1 R2 $\ddot{\cdot}$ 8 outputs

▼Output Condition settings Program Reset

utput Condition	n settings 🛛 🖡	rogram Rese	t						powered by SUS Corp
OUT					COND	ITION1	DURATIO		
001		1	2			STATE	1	2	OUIFULTIPE
(Example)	INI	ON	AND	IN2	OFF	THEN DELAYTIME 3.0 slater	IN3 ON	OR DELAYTIME 5.0 sec	ON A
OUT1	-		-	-] –]	THEN D-TIME 0.0 S later	CONDITION1 Turn OFF		ON
OUT2	-	-			-	THEN D-TIME 0.0 Stater	CONDITION1 Turn OFF		ON
OUT3	-					THEN D-TIME 0.0 S later	CONDITION1 Turn OFF		ON
OUT4	-	-	-	-	-	THEN D-TIME 0.0 S later	CONDITION1 Turn OFF		ON
OUT5	-		-	-] -]	Available outp			ON
OUT6	-	-	-	-	-	THEN D-TIME 0.0 S later C	CONDITION1 Turn OFF		ON
OUT7	-		-	-] -]	THEN D-TIME 0.0 * later	CONDITION1 Turn OFF		ON
OUTS	-	-	-	-	-	THEN D-TIME 0.0 S later	CONDITION1 Turn OFF		ON -
FLAG1	_	- 1	-	-	_	THEN D-TIME 0.0 A later C	ONDITION1 Turn OFF		ON
FLAG2	-	-		_	-	The rest is for interna	l outputs.		ON

• SiO3.2 / SiOt : 2 outputs

▼Output Condition settings	Program Reset	

F Ou	tput Condition	settings 🗌	Program Reset							powered by SUS Corporat
	OUT					COND	ITION1	DURATI	ON TIME(UNTIL)	OUTBUT TYPE
	001		1		2		STATE	1	2	OUTFOIL THE
	(Evample)	INH	ON	AND	IN/9	OFF	THEN DELAYTIME 3.0 clatar	1N3 O.N	OR DELAYTIME 5.0 rec	
	OUT1		- [-	-		Available out			ON
	OUT2		- [-			THEN D-TIME 0.0 * ister	CONDITION1 Turn OFF		ON -
ľ	FLAG1	_] -]	-][-] [-]	THEN D-TIME 0.0 There	CONDITION1 Turn OFF		ON A
	FLAG2	-] -]	-	-	-				ON E

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■internal outputs

+ SiO-C / SiO2 / SiO-N1 / SiO3.2 / SiO3 / SiOt : 48 outputs

OUT					CONDI	ION1			DURAT	TON TIME	(UNTIL)		OUTPUT TYPE
001		1		2		S	TATE		1		2		OUTPUT TYPE
(Example)	INT	UN	AND	1142	UFF	THEN	DELAYTIME 3.0 slater	IN3	Turn UN	UR	DELAY TIME	5.U sec	UN
OUT1						THEN	D-TIME 0.0 s later	CONDITION1	Turn OFF				ON
OUT2	-	-	-	-	-	THEN	D-TIME 0.0 s later	CONDITION1	Turn OFF	-	-	-	ON
							:						
FLAG40	[_	-	-	- 1	-	THEN	D-TIME 0.0 * steer	CONDITION 1	Turn OFF	-	-		ON
FLAG41		-	-	_	-	THEN	D-TIME 0.0 * later	CONDITION1	Turn OFF	-	-	-	ON
FLAG42		-	-	-	-	THENT			Turn OFF	-	-	-	ON
FLAG43						THEN		CONDITION1	Turn OFF				ON
FLAG44		-	-	-	-]	THEN	D-TIME 0.0 s later	CONDITION 1	Turn OFF	-	-	-	ON
FLAG45						THEN	D-TIME 0.0 S later	CONDITION 1	Turn OFF				ON
FLAG46	-] -	-	-] -]	THEN	D-TIME 0.0 s later	CONDITION 1	Turn OFF	-	-	-	ON
						TUEN			Turn OFF				ON

+ SiO-N3 / SiOt1 / SiOt3 / SiO2 R2 / SiO-N1 R2 : 256 output

OUT		1		2	COND.	STATE	1	2	OUTPUT TYPE			
(Example)	IN1	ON	AND	IN2	OFF	THEN DELAYTIME 3.0 s later	IN3 Turn ON	OR DELAYTIME 5.0 sec	- NO			
OUT1	-		-	-	-	THEN D-TIME 0.0 s later	CONDITION1 Turn OFF		ON			
OUT2	-	- [-	-	-	THEN D-TIME 0.0 s later	CONDITION1 Turn OFF		ON			
FLAG248	-	-	-	-	-	THEN D-TIME 0.0 s	CONDITION1 Turn OFF		ON			
FLAG249	-		-	-	-	THEN D-TIME 0.0 😴 Ister	CONDITION1 Turn OFF		ON			
FLAG250	-	- [-	-	-	THEN D-TIME D.O. 🛬 🦛	CONDITION1 Turn OFF		ON			
FLAG251	-		-	-	-		CONDITION1 Turn OFF		ON			
FLAG252	-	- [-	-	-	THEN D-TIME 0.0 Slater	CONDITION1 Turn OFF		ON			
FLAG253	-		-	-	-	THEN D-TIME 0.0 S later	CONDITION1 Turn OFF		ON			
FLAG254	-	- [-	-	-	THEN D-TIME 0.0 Stater	CONDITION1 Turn OFF		ON			
FLAG255	-		-	-	-	THEN D-TIME 0.0 s later	CONDITION1 Turn OFF		ON			
RLAG256	-	- [-	-	-	THEN D-TIME 0.0 s later	CONDITION1 Turn OFF		ON -			

The displayed FLAG is up to FLAG 48 by default.

To display up to FLAG256, please refer to [Addition of FLAG and Multi sel] of Page.39. You can change the display ratio between the OUT pane and FLAG pane by dragging the blue bar between the two panes up or down.

V 0	utput Condition	settings (Program Res	at											powered by SUS (Corpora	tion
	OUT		CONDITION 1								DURAT	tion time	E(UNTIL)		OUTPUT TYPE		
	001		1		2			STATE			1		2		OUTFOIL THE		
	OUT8	-	-	-	-	-	THEN	D-TIME 0.0) 🔺 s Iater	CONDITION1	Turn OFF	-	-	-	ON	^	
	OUT9	-	-	-	-	-	THEN	D-TIME 0.0	s Inter	CONDITION 1	Turn OFF	-	-	-	ON		
	OUT10	-	-	-	-	-	THEN	D-TIME 0.0) 🔺 S V later	CONDITION 1	Turn OFF	-	-	-	ON		
	() () () () () () () () () ()																
	FLAG1	-		-		-	THEN	D-TIME 0.0) 🔺 s Ister	CONDITION 1	Turn OFF	-	_	_	ON	Â	
	FLAG2	-	-	-	-	-	THEN	D-TIME 0.0) 🛓 s later	CONDITION1	Turn OFF	-	-	-	ON	Ξ	
	FLAG3	-	-	-	-	-	THEN	D-TIME 0.0	s Ister	CONDITION1	Turn OFF	-	-	-	ON		Change the
	FLAG4	-	-	-	-	-	THEN	D-TIME 0.	s Iater	CONDITION1	Turn OFF	-	-	-	ON		display ratio.
	FLAG5	-	-	-	-	-	THEN	D-TIME 0.	s Ister	CONDITION1	Turn OFF	-	-	-	ON		
	FLAG6	-	-	-	-	-	THEN	D-TIME 0.0		CONDITION 1	Turn OFF	-	-	-	ON		

Creating an I/O program

1. Click the desired numbered output button to enable it.

Doing so turns the button blue and allows you to edit the output settings for the selected number.

* The outputs that have not been clicked (OUT2 and subsequent outputs, shown below) are dimmed.

These outputs are disabled and do not work, although their settings can be written to the controller.

T	'Output Cor	ndition setti	ngs Pr	ogram Res	et				
	OUT					CONDI	TON1		
	001		1		2				NE
	(Example)	INI	ON	AND	IN2	OFF		THEN	C
	OUT1	*)[*)) []		THEN	
	OUT2	-] -]	-		-		THEN	
	OUT3]	_		-		THEN	
	OUT4	_	-	-	_	-		THEN	

2. Set each item.

OUT					CONDI
.01	1			2	
(Example)	INI	ON	AND	IN2	OFF
	*	*	-])
UT2	-5	Cl	ick	-	
DUT3			-		
			_		
OUT4	-	-	-	-	

* Position the cursor over the desired numbered output button to see a sentence that describes the settings.

OUT		CONDITIO	ON1	DURATIO		
001	1	2	STATE	1	2	OOIPOT TIPE
(Example)	INI ON AND	IN2 OFF	THEN DELAYTIME 3.0 slater	IN3 ON	OR DELAYTIME 5.0 sec	ON
	IN1 ON AND	IN2 OFF	THEN D-TIME 3.0 s later	IN3 Turn ON	OR D- TIME 5.0 🔶 sec	ON
	is FONJ AND FIN2J is FOR	FJ THEN [3.0after s	ecj output until 「IN3」is 「Turn ON」 OR 「5.0	ecj. [OUT1] is [ON].		ON
OUT3			THEN D-TIME 0.0 S later	CONDITION1 Turn OFF		ON

Specify settings for each output. For more details, see **"Details of each item"** (\rightarrow Page 22).

Item	Description									
OUT	Indicates the destination to which a signal is output when set conditions are met.									
	For OUT1, you can specify settings for output 1.									
	Specify conditions for enabling output.									
CONDIMIONI	You can set two conditions and associate them using the [And] or [Or] option. If you want to set only one condition, select "—" for the third to fifth buttons.									
CONDITIONI	Example: To enable output when IN1 (input 1) or IN2 (input 2) turns on									
(1 and 2)	INI ON OR IN2 ON OR IN2 ON IN2 ON									
	Specify the state after which to enable output if the ON conditions are met.									
	Select [THEN], [CONTINUES], or [TIMES THEN DELAYTIME 3.0 s later									
	THEN], and specify the time period after which									
	For [CONTINUES], set the number of counts as well.									
	* The count value will be reset when the OFF conditions are met.									
STATE	THEN TIMES THEN CONTINUES									
	Specify how long to wait before output is enabled after the conditions are met. Example 1: " 0.0 " \rightarrow Enables output at the UNIMPORT $1 = 0.0$ " \rightarrow Enables output at the									
	moment the conditions are met. Example 2: "2.0" \rightarrow Enables output 2 seconds after the conditions are met. Example: "3.0" \rightarrow Enables output if the conditions are met for 3.0 seconds.									
	* You can set values D-Times or via hardware timers T1 and T2. → See "Timer settings" on page 25									
	Set conditions for turning off the output that was enabled when the conditions set above were met									
	You can set two conditions and associate them using the [And], [Or], or [Before] option.									
DURATION TIMES (UNTIL)	If you want to set only one condition, select "—" for the third to fifth buttons. * If you specify how long to wait before output is turned off ([Before]), you cannot select [And] to combine two conditions.									
(1 and 2)	Example: To turn off output 5 seconds after IN3 turns on									
	DURATION TIME(UNTIL) 1 2 IN3 ON OR DeLAY TIME 5.0 sec IN3 Turn ON BEFORE D-TIME 5.0 sec									
OUTPUT TYPE	Set the type of output. For ON/OFF cycles, you can select from three options.									

3. Write the settings to the controller.

If not, the settings will not be applied to the controller.

* Make sure that the controller is in the STOP state before writing the settings to the controller.

If the controller is in the RUN state, a message like the one shown below appears. Click the [OK] button to force the controller off to start writing.



If there are invalid settings, a window like the one shown below appears. Check and correct the invalid output condition settings, which are highlighted in red.



▼Output Condition settings Program Reset

OUT					CONDI	TION 1
001		1		2		
(Example)	IN1	ON	AND	IN2	OFF	
OUT1 (LAMP1)	IN1 (SW1)	0N	AND	-	-	
OUT2 (LAMP2)	IN2 (SW2)	ON	AND	IN3 (SW3)	ON	
OUT3 (LAMP3)	_	$\left - \right $	-	_	-	

Details of each item

This section details the items you can select in the program window.

(1) CONDITION1

ON conditions are used to turn on output. When set conditions are met, the output turns on. You can specify two conditions.

Three or more conditions can be set by using old multiple selection (\rightarrow Page 33) or new multiple selection(\rightarrow Page 35), or by specifying unused output or internal output as a condition (\rightarrow Page 41).

Item	Description						
	Indicates that the controller is in the RUN state.						
RUN	If you select [RUN] and [ON], this condition is all controller is used.	ways met when the					
	Do not select [RUN] and [OFF], as this will disable output.						
	This signal stays on for a specified number of sec goes into the RUN state. You can set the number [PARAMETER] area. See page 27 for more detail	onds after the controller of seconds in the s.					
INIT	[INIT] + [ON]: Turns on output when the contrastate, and turns off output after seconds.	coller goes into the RUN c a specified number of					
	[INIT] + [OFF]: Turns off output when the contrastate, and turns on output after seconds.	roller goes into the RUN r a specified number of					
IN1 to IN16 OUT1 to OUT16	Set conditions using [IN] (input), [OUT] (output), output), and [Ether](Ethernet).	, [FLAG] (internal					
FLAG1 to	[IN1] + [ON]:Enables output when IN1 turns[OUT1] + [ON]:Enables output when OUT1 turns	s on. ms on.					
Ether1 to Ether64	[FLAG1] + [ON]: Enables output when FLAG1 to [Ether1] + [ON]: Enables output when Ether1 to	arns on.					
	Allows you to group multiple inputs and outputs	and their ON/OFF status					
New Multi sel	into one condition. You can configure settings for	the new multiple					
	selection option in the [PARAMETER] area (\rightarrow Parameters) PARAMETER]	age 35).					
Old Multi sel	Allows you to group multiple inputs and outputs can configure settings for the old multiple selecti [PARAMETER] area (→ Page 33).	into one condition. You on option in the					
AND OR	Used to specify a second condition. [And] enables output when both the first and sec [Or] enables output when either the first or second	ond conditions are met. nd condition is met.					

(2) STATE

The [STATE] area allows you to set a time period as a condition or specify how long to wait before the operation starts.

Item	Description
	Specify how long to wait from the moment the ON conditions are met
THEN	until output is enabled. Once the conditions are met, the output stays on
1111210	even if the conditions are no longer met during the wait time. You can
	specify up to 6,000.0 seconds.
CONTINUES	Selecting this option enables output only when the ON conditions are met
CONTINUES	for a certain period of time. You can specify up to 6,000.0 seconds.
	This option enables output when the ON conditions are met a specified
	number of times. Set the number of counts and specify how long to wait
	before output is enabled after the set count is reached. The count is
	incremented each time the ON conditions are met. You can specify up to
	50,000 times.
TIMES THEN	Example: If the ON condition is [IN1] + [ON], and when IN1 turns on,
	off, and then back on, the number of counts is two.
	The count is reset when the OFF conditions are met. If you select
	[CONDITION1] + [OFF] as an OFF condition, the count is reset and
	output is disabled.

(3) DURATION TIMES(UNTIL)

Specify conditions for turning off the output set in the [OUTPUT TYPE] area. You can specify two OFF conditions.

Three or more conditions can be set by using old multiple selection (\rightarrow Page 33) or new multiple selection(\rightarrow Page 35), or by specifying unused output or internal output as a condition (\rightarrow Page 41).

Item	Description
	Indicates the conditions set in the [CONDITION1] area.
CONDITION1	Selecting [CONDITION1] + [OFF] disables output when the ON conditions are no longer met.
	If you select [CONDITION1] + [ON], output is not enabled even if the ON
	conditions are met.
	Dalay Time.Turns off output when a specified time period has elapsed
D-Time	after output is enabled.
	You can enter a value directly. You can specify up to 6,000.0 seconds.
	Turns off output when a specified time period has elapsed after output is
T1, T2	enabled.
	You can set hardware timers. (\rightarrow Page 25)

	Indicates that the controller is in the RUN state.
DIN	If you specify [RUN] and [OFF] and once output is enabled, it continues
RUN	until the RUN switch on the controller is turned off.
	Note that if you set [RUN] to [ON], no output occurs.
	Set conditions using [IN] (input), [OUT] (output), [FLAG] (internal
IN1 to IN16	output), and [Ether](Ethernet).
OUT1 to OUT16	Selecting [IN1] + [ON] turns off output when IN1 turns on.
FLAG1 to	Selecting $[OIIT1] + [ON]$ turns off output when $OIIT1$ turns on
FLAG256	
Ether1 to Ether64	Selecting [FLAG1] + [ON] turns off output when FLAG1 turns on.
	Selecting [Ether1] + [ON] turns off output when Ether1 turns on.
	Allows you to group multiple inputs and outputs and their ON/OFF status
New Multi sel	into one condition. You can configure settings for the new multiple
	selection option in the [PARAMETER] area (\rightarrow Page 35).
	Allows you to group multiple inputs and outputs into one condition. You
Old Multi sel	can configure settings for the multiple selection option in the
	[PARAMETER] area (\rightarrow Page 33).
	Used to specify a second condition.
	[AND] disables output when both the first and second conditions are met.
AND	[OR] disables output when either the first or second condition is met
OR	[OII] disables output when either the first of second condition is met.
AFTER	[BEFORE] disables output when the first condition is met and then the
	second condition is met.
	* If you select [AND], you cannot specify [D-TIME], [T1], or [T2].

(4) OUTPUT TYPE

You can set the type of output.

Item	Description
ON	Causes the output to stay on. A light would stay lit.
	Turns output on and off alternately. A light would blink.
ONOFF ALT	You can specify three ON/OFF cycle settings and can change the ON and OFF time periods in the [PARAMETER] area.

Timer settings

When setting a timer in the [STATE] or [DURATION TIMES(UNTIL)] area, you can choose to enter D-TIME or use a hardware timer.

CONDITION2	DURATION TIME(UNTIL)
	1 2
later	D-TIME 1.0 🚖 sec 🗕 – –
T1 sec CONTINUES	T1 sec
3 🔄 TIMES T2 s Inter	T2 sec – – –

1. D-TIME(Dalay Time)

Enter a time period directly. You can specify up to 6,000.0 seconds in 0.1-second increments.

2. Hardware timers

[T1] and [T2] indicate that the hardware timers are being used. These timers are especially useful when the same value is used repeatedly or if you may need to change timer settings without using the computer.

The maximum values of the hardware timers can be set as that for the analog timers on the controller. You can set the maximum values of the hardware timers in the [HARD TIMER MAX] area in the PC software. You can specify maximum values from 5.0 and 6000.0 seconds in 0.1-second increments.

Once you enter maximum values, set the analog timers relative to the maximum values.



- (1) Set the maximum values of the hardware timers to 5.0 seconds.
- (2) Set the analog timers with a maximum of 5.0 seconds.

* Timer settings are accurate to within $\pm 0.1\%$ of actual time.

I/O notes

Memos (labels) can be set for various outputs of IN, OUT, FLAG, Ether, new multiple selection, and old multiple selection.

I/O notes help you create a program by giving you an idea of how input and output devices will operate.

<input memo=""/> INPUT MEMO Reset	<0	OUTPUT MEMO>	OUTPUT MEMO Reset		AG MEMO> FLAG MEMO Reset Ether MEMO Reset
IN NAME		OUT	NAME		FLAG Ether
1	*			^	
2	-	2			2
3		3			3
4	-	4			4

I/O notes can contain up to nine full-width characters or 16 alphanumeric characters. Enter the names of the input and output devices that are actually connected, and you will see those names in messages (displayed when you position the mouse cursor over output buttons) and on items set in the program window. This allows you to check how the devices operate.

The notes you enter are also reflected in the I/O monitor and simulator windows.

					COND:	ITTON1					DUR	ATIC
				2			STATE				1	
(Example)	INI	ON	AND	IN2	OFF	THEN	DELAYTIN	E 3.0	s later	IN3	Turn ON	4
OUT1 (Lamp ON)	IN1 (Green SW)		(-		THEN	D-TIME	1.0	💼 s late	IN2 (Red SW)	Turn ON	
	Green Swrj is	FON]	THEN [1.	.0after secJ	output	until 「Red SW」 is 「	Turn ONJ .	「Lamp	ON] is	FONJ . TION	1 Turn OFF	
OUT3	_			_)[]	THEN	D-TIME	0.0	s Iater		1 Turn OFF	
OUT4	_]	[_]	[_][-	_]	THEN] О-ТІМЕ	0.0	▲ S ▼ loter		1	T
FLAG1 (Move Flg)	IN3 (EMG)	• • • •		•••••)	THEN	•	0.0	🛃 📫		1 Tum OPF	
FLAG2	(_)			-		THEN	D-TTMF	Juu	*	CONDITION	1 Turn OFF	
KINPUT MEM) Reset			JT MEMS			KFLAG N	IEMO>	FLAG MEMO Rese	t Ether MEND F	Reset
IN	1A/	ИE		OL	UT	NAME		FLA	G Ethe	er		
	Green SW				1 []	amp ON			1	Move Fig]
2	Red SW		<u> </u>		2				2			
	EMG			E	8		E		3			
4					4			C	4			
4 Output Condition	ı settings> F	togram Reso	et		4	010		-9	4		71	
4 Output Condition	settings> F	togram Res	et		4 CONDI			-y	4 (a 1	e	F I	IOIT
Cutput Condition	i settings>	rogram Reso 1	et	2	4 CONDI		STATE	С	4		DURA	TION
Output Condition	i settings> F	togram Res 1 ON	et AND	2 1N2	4 CONDI		STATE DELAY TIME		4		DURA 1 Turn ON	TION
Cutput Condition	INI INI INI (Green SW)	togram Reso 1 ON ON	et AND	2 IN2 	CONDI OFF		STATE DELAY TIME	۵۵ : ۱.0	4	IN3 IN2 (Red SW)	DURA" 1 Turn ON Turn ON	
d 4 Output Condition OUT (Example) OUT (Lamp ON) FLASI	IN1 IN1 (Green SW)	togram Res 1 ON	et	2 IN2 -	CONDI OFF			30 s	4		DURA 1 Turn ON Turn ON	
0 4 Output Condition OUT (Example) OUT1 (Lamp ON) CUT1 (Lamp ON)	INI INI (Green SW) IN3 (EMG) Etherl	rogram Resolution		2 IN2 -	CONDI OFF		STATE DELAYTIME D-TIME D-TIME		4		DURAT 1 Turn ON Turn ON Turn OFF	
d 4 Output Condition OUT (Example) OUT (Lamp ON) FLAG1 (Move File) FLAG2	INI INI (Green SW) IN3 (Ether1 (EtherFig)	I ON ON		2 IN2 -			STATE DELAYTIME D-TIME D-TIME		4		DURA 1 Turn ON Turn ON Turn OFF • Turn OFF	
4 Output Condition OUT (Example) OUT (Lamp ON) FLAG1 (Move Fig) FLAG2 FLAG3	IN1 IN1 (Green SW) IN3 (Ether1 (Ether1 (Ether1)	TOERSAM RES	et	2 IN2 -			STATE DELAY TIME D-TIME D-TIME D-TIME D-TIME		4 slater s later s later s later s later		DURA 1 Turn ON Turn ON Turn OFF Turn OFF Turn OFF	
d 4 Output Condition OUT (Example) OUT (Lamp ON) CLITO FLAG1 FLAG2 FLAG3 FLAG4	INI INI (Green SW) IN3 (EMG) Ether1 (EtherFlg) -	I ON ON ON	et	2 IN2 - -	COND		D-TIME		4 later s s s s s s s s s s s s s	IN3 IN2 (Red SW) CONDITION1 GONDITION1 CONDITION1	DURA 1 Turn ON Turn ON Turn OFF • Turn OFF Turn OFF Turn OFF	
GUT Cutput Condition OUT (Example) OUT (Example) OUT (Example) OUT FLAG1 (Move Fig) FLAG2 FLAG3 FLAG4	INI INI (Green SW) INI (Ether1 (Ether1 (EtherFig) - -	I ON ON ON ON ON ON ON	et	2 IN2 - - - - - - - - -	CONDI OFF		STATE DELAYTIME D-TIME D-TIME D-TIME D-TIME		4 later stater stater later later later stater		DURA 1 Turn ON Turn ON Turn OFF Turn OFF Turn OFF Turn OFF Turn OFF	

• About reading / registering memos in the controller

For various SiO controllers (excluding SiO C and SiO 3.2) with controller version 3.60 or higher, Equipped with a memo save function.

You can read / register each memo to the compatible controller by clicking the icon in the figure below.

<input men<="" th=""/> <th></th> <th><pre><output memo=""> OUTPUT MEMO Rese</output></pre></th> <th>FL</th> <th></th> <th></th> <th><parameter> New MultuSelect Test</parameter></th>		<pre><output memo=""> OUTPUT MEMO Rese</output></pre>	FL			<parameter> New MultuSelect Test</parameter>
IN	NAME	OUT NAME		FLAG Ether		Parameter New Multi Select SiOt series only Old Mu
	Sensor ^	1 Lamp	^	1 Function 1	^	1 Open
2	Button	2 Buzzer		2 Function2		2 Open

Also, there is a checkbox called " \square Including MEMO" at the bottom of the screen under the load / register button.

If checked, a memo will be included when loading / registering the program.

KINPUT MEN	10> INPUT MEMD Reset 🔛 🛄	, <	OUTPUT MEMO> 🛛	DUTPUT MEMO Reset 📃 🛄	<flag me<="" th=""><th>10> FLAG MEMD Reset 🔛 🛄</th><th></th><th><parameter> New MultuSelect Ress 🔛 🛄</parameter></th></flag>	10> FLAG MEMD Reset 🔛 🛄		<parameter> New MultuSelect Ress 🔛 🛄</parameter>
IN	NAME		OUT	NAME	FLAG	Ether		Parameter New Multi Select SiOt series only Old Mu · ·
1	Sensor	^	1 Lamp	· · · · · · · · · · · · · · · · · · ·		Function1	^	1 Open ^
2	Button		2 Buzzer	r		Function2		2 Open
3			3					3 Open
4		~	4				~	4 Open V
				Controller		Controller WRITE		
					🗹 Includ	ng MEMO		

* For communication that does not include memos, the time required for reading / registration can be shortened.

Parameter settings

The [Parameter settings] area allows you to change parameters or Setting New Multiple Selection and Old Multiple Selection or address / port settings.

<paramete< th=""><th></th><th>TER Reset</th><th></th><th></th><th></th><th></th><th><parame< th=""></parame<></th></paramete<>		TER Reset					<parame< th=""></parame<>
Parameter	New Multi Se	elect SiOtse	ries only	Old M.	+ F]	Parameter
HARD T	IMER MAX [5)	Dsec-6000.Dse	5]				Addres IP addre
T1	5.0 sec	T2	5.0 sec				Auto
ON&OF	F ALTERNAT	[ON [0.2sec-1]	10)osec(01	V+OFF)]			IP
No.	ON TIME	OFF TIME					Sub
1	0.2 sec	0.3 sec					Defau
2	0.5 sec	0.5 sec					P
3	0.5 sec	1.5 sec					MAC
INIT TIM	1E [0.1 sec-1 00	I.Osec]					Controlle
1.0	sec						
							Timeout

<pre><parameter> PARAME</parameter></pre>	'ER Reset						
Parameter New Multi S	lect SiOt series on	ily Old Mu					
Address / Port	Address / Port						
IP address							
● Auto 🔿 Manua							
IP address	192 . 168 . 0	. 100					
Subnet mask	255 . 255 . 255	i . O					
DefaultGateway	192 . 168 . 100).1					
Port No.	40001						
MAC address							
Controller Name [Up to 20 characters]							
Timeout setting [1sec	60min]						
🖲 Enable 🔵 Disabl	0 min	30 sec					

◆ Parameters

Item	Description				
HARD TIMER MAX	Set the maximum values of the hardware timers. See page 25 for details on the hardware timers. You can specify maximum values from 5.0 to 6000.0 seconds separately for T1 and T2.				
	These settings are related to [ONOFF ALT No. 1], [ONOFF ALT No. 2], and [ONOFF ALT No. 3] in the [OUTPUT TYPE] area of the program window. You can set when to switch the output on and off alternately.				
	Specify a value from 0.1 to 99.9 seconds.				
ON/OFF	OFF TIME: The time period during which the output is OFF Specify a value from 0.1 to 99.9 seconds.				
ALTERNATION	Make sure that the total time (ON time + OFF time) is in the range of 0.2 to 100.0 seconds. You cannot set values outside this range.				
INIT TIME	This is the time period for the [INIT] option, which can be used in the [CONDITION1] area of the program window. When you put the controller into the RUN state, the INIT signal turns on internally, and then turns off after a specified number of seconds. You can use the INIT signal to enable output for a certain number of seconds after the controller enters the RUN state. This option is useful when you want to reset all settings or perform origin return of all output devices at once.				

Item	
	Set the IP address subnet mask port number for Ethernet communication.
Address/Port	Moreover, a MAC Address can be read.
	This parameter can use only a SiOt series controller.

About automatic / manual setting of address

In the address setting, set the IP address, subnet mask, default gateway.

The DHCP (IP address automatic assignment) function can be turned ON / OFF by switching the automatic / manual button as shown in the figure below.

In addition, the initial value when SiO-Programmer is started is set to automatic.

• Auto

The controller automatically obtains the IP address, subnet mask, default gateway value from a DHCP (IP address auto-assignment) server such as a router and connects to the network.

The value is displayed by communicating using SiO-Programmer while the controller is connected to the network.

In addition, all the setting points in the frame will be grayed out, and you will not be able to input anything from the PC side.



• Manual

Connect to the network by registering with the controller by entering the IP address, subnet mask, default gateway value.

Parameter New Multi S	ielect SiOt series only Old ML
Address / Port	
IP address O Auto Manua	1
IP address	192 . 168 . 0 . 100
Subnet mask	255 . 255 . 255 . 0
DefaultGateway	192 . 168 . 100 . 1
Port No.	40001
MAC address	

* When registering with the controller, register with the controller

If the automatic / manual setting that was set is changed,

A message will be displayed as shown on the right.

To reflect when switching between automatic / manual

Settings Turn off the power of the controller once.

The automatic / manual setting of the address / port has been switched. I is necessary to turn off the power of the controller and restart it for it to take effect.	
OK	

 \sim

About Ethernet communication timeout setting

Description of timeout settings

If a command is not sent from a device that supports Ethernet communication such as a PC within the set time, this function cancels the connection status of the controller and enables quick reconnection.

The initial value is set to "valid" for 30 seconds.





[Example 3] When there is a timeout setting (30 seconds)

In this way, if the command cannot be received in time, the controller determines that the communication has failed and disconnects the connection state.

By setting the timeout, it is possible to quickly switch from disconnection to recovery.

$\boldsymbol{\cdot} \text{ If enabled}$

Select "Enabled" if a timeout setting is required.

The initial value is 30 seconds, and the input range can be set from 1 second to 60 minutes.



• If disabled

Select "Disable" if you do not need to set the timeout.

In the "disabled" state, you cannot click the text that sets the timeout period.



• About the controller name for Ethernet communication

Description of controller name

It is a name tag that can be used to distinguish the controller when using Ethernet communication software (IoT Progreammer).

<parameter> PARAMETER Reset</parameter>										
Parameter New MultiS	elect	SiOt se	ries only	Old ML • •						
Address / Port IP address Auto	ıl									
IP address	192	. 168	. 0	. 100						
Subnet mask	255	. 255	. 255	. 0						
DefaultGateway	192	. 168	. 100	. 1						
Port No.	40001									
MAC address	-	-		-						
Controller Name [Up to 20 characters]										
Timeout setting [1sec	-60mi	n]								
🖲 Enable 🔵 Disable	в	0	min [30) sec	:					

The SiO Programmer writes and reads the set controller name.

* The controller name can also be confirmed from the Ethernet communication software (IoT Progreammer).

◆ Old Multi Sel(Old Multiple selections)

You can display old multiple-selection conditions by selecting the [Old Multi Sel] tab in the [PARAMETER] area.

The old multiple selection option allows you to group multiple inputs and outputs.

Although you can only specify up to two I/O devices as ON or OFF conditions, this option enables you to use multiple inputs and outputs as one condition.

Old Multiple selections displayed by default are 16 types, but there are up to 64 choices available.

To see up to 64 old multiple selections, see Add FLAG and Old Multi sel on page 39

In that case, FLAG in old multiple selection can be selected up to FLAG256.

How to set and use the Old Multiple selection

Clicking [Open] opens a separate window where you can configure settings.



Example: In the [Old Multi select 1] window, select the [IN1] (switch 1) to [IN4] (switch 4) check boxes and select [And].



The content of the old multiple selection that has been set will be displayed by clicking "Setting List" on the setting screen.

Bittlemicht OUT Bittle OUT Bittle OUT Bittle OUT Bittle OUT	FLAG FLAG1 FLAG2 FLAG3 FLAG4 FLAG4 FLAG6 FLAG6 FLAG6 FLAG9 FLAG9	 FLAG17 FLAG18 FLAG19 FLAG20 FLAG21 FLAG22 FLAG22 FLAG23 FLAG24 FLAG25 			Cold Multi Se	elect01(All SW) Old Multi Sele	ect01 (All SW)	ON	
()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ()) ())	FLA01 FLA02 FLA03 FLA04 FLA04 FLA04 FLA06 FLA06 FLA07 FLA09 FLA09	FLAG17 FLAG18 FLAG19 FLAG29 FLAG21 FLAG22 FLAG23 FLAG24 FLAG25	FLAG33 FLAG34 FLAG35 FLAG35 FLAG35 FLAG37 FLAG38 FLAG39 FLAG40		Contraction of the second seco	elect01(All SW) Old Multi Sele	ect01 (All SW)	ON	
PM2Gomineh.2 0.0172 M12Gomineh.3 0.0173 PM4Gomineh.4 0.0174 PM4Gomineh.4 0.0174 PM4 0.0176 PM4 0.0177 PM6 0.0177 PM8 0.0178 PM6 0.0171 PM8 0.0178 PM10 0.01718 PM10 0.01718	FLA02 FLA03 FLA04 FLA05 FLA05 FLA06 FLA07 FLA07 FLA08 FLA08 FLA09 F	FLAG18 FLAG19 FLAG19 FLAG20 FLAG21 FLAG22 FLAG23 FLAG24 FLAG25	FLAG34 FLAG35 FLAG38 FLAG38 FLAG38 FLAG38 FLAG38 FLAG38 FLAG39 FLAG39		And>	elect01(All SW) Old Multi Sele	ect01 (All SW)	ON	
Bit Simich 3 0 UT3	FLAG3 FLAG4 FLAG4 FLAG5 FLAG6 FLAG6 FLAG6 FLAG6 FLAG6 FLAG6 FLAG6 FLAG6	FLAG19 FLAG20 FLAG21 FLAG22 FLAG23 FLAG23 FLAG24 FLAG24	FLAG35 FLAG38 FLAG38 FLAG38 FLAG38 FLAG38 FLAG39 FLAG39		<and></and>	Old Multi Sele	ect01 (All SW)	ON	
HIGsmitch 0.01% NS 0.01%	FLAG4 FLAG5 FLAG6 FLAG6 FLAG6 FLAG6 FLAG6 FLAG6 FLAG6 FLAG6	FLA020 FLA021 FLA022 FLA022 FLA023 FLA023 FLA023 FLA025	FLAG88 FLAG88 FLAG88 FLAG88 FLAG88 FLAG88 FLAG88		<and></and>	Old Multi Sele	ect01 (All SW)	ON	
> 36 0.0175 > 36 0.0176 > 37 0.0177 > 38 0.0178 > 39 0.0176 > 310 0.0171 > 301 0.0171 > 301 0.0171 > 301 0.0171	FLAGS FLAGS FLAGS FLAGS FLAGS FLAGS FLAGS FLAGS FLAGS	FLAG21 FLAG22 FLAG22 FLAG23 FLAG24 FLAG25	FLAG87 FLAG88 FLAG88 FLAG88		<and></and>	Old Mildel	5001 (All 300)		
386 00176 370 00177 388 00178 389 00179 3810 00171 3811 00171	FLAG6 FLAG7 FLAG8 FLAG9 FLAG9	FLAG22 FLAG23 FLAG24 FLAG24 FLAG25	FLAG88 FLAG88 FLAG88 FLAG40		<and></and>				
Tuo Tuo N8 OUT8 N8 OUT8 N8 OUT9 N10 OUT10 N11 OUT10	FLAG7 FLAG8 FLAG9 FLAG9	FLA023 FLA024 FLA025	FLAG29						
3NUO 3NI 9NI 9NI 9NI 9NI 9NI 9NI	FLAGS	FLAG24	FLAG40						
N9 OUT9 OUT9 OUT10 OUT1 OUT11 OUT11	E FLAGS	FLAG25							
N10 OUT10 N11 OUT11 OUT11	CT ELAG18		FLAG#1		Switch1	Switch2	Switch3	Switch4	
		FLAG26	ELAG42						
	FLAG11	FLAG27	FLAG43						
	ELAG12	FLAG28	FLAG44						
DUT13	FLAG13	FLAG29	FLAG45						
□ 1N14 □ OUT14	ELAG14	FLAG80	FLAG46		7				
□ 3N15 □ OUT15	FLAG15	FLAG31	FLAG47						
□ 1N16 □ OUT16	FLAG16	FLAG82	FLAG48						
	<			-					

< Example of use>

Create the following program:

OUT			COND	ITION1	DURATIO	ON TIME(UNTIL)		
001	1		2	STATE	1	2	CON OF TIPE	
(Example)	INI ON	AND	IN2 OFF	THEN DELAYTIME 3.0 slater	IN3 Turn ON	OR DELAYTIME 5.0 sec	ON	
OUT1	Old Multi Self (All SW) ON	-		THEN D-TIME 0.0 S later	CONDITION1 Turn OFF		ON	

This program causes a lamp to light up when all switches (1 to 4) are turned on.



◆ New Multi Sel(New Multiple selections)

*The new multiple selection can only be used with SiO-N1 R2, SiOt, and SiOt3 Ver3.70 or higher.

You can display new multiple-selection conditions by selecting the [New Multi Sel] tab in the [PARAMETER] area.

The new multiple selection option allows you to group multiple inputs and outputs.

Although you can only specify up to two I/O devices as ON or OFF conditions, this option enables you to use multiple inputs and outputs as one condition. In addition to this, the new multiple selection allows you to set the ON and OFF states of each selected input/output, which can be set as a specific condition.

There are 64 types of new multiple selections that can be created, and the output that can be set is IN/OUT of the registered controller and FLAG1 to 256.

-

How to set and use the New multiple selection

Clicking [Open] opens a separate window where you can configure settings.

<parameter> New MultuSelect Ress 🌄 💼</parameter>	
Parameter New Multi Select SiOt series only Old M. • •	
1 All SW Open	
2 Open	
3 Open	
4 Open	
5 Open	
6 Open 🗸	
Enter a note.	- CO1
Example: New Multiple selections 1	
"All switches"	

IN ON	~	OUT ON	\sim		FLAG ON	\sim						
IN I(Sw itch 1)	ON ~		ON	\sim	FLAG1	ON	~	FLAG17	ON	✓ □ FLAG33	ON	~
IN2(Sw itch2)	ON ~	0UT2	ON	~	ELAG2	ON	~	FLAG18	ON	✓ □ FLAG34	ON	~
□ IN3(Sw	ON v		ON	~	E FLAG3	ON	~	FLAG 19	ON	V 🗌 FLAG35	ON	V
IN4(Sm itch4)	ON v	D OUT4	ON	\sim	ELAG4	ON	~	FLAG20	ON	✓ □ FLAG36	ON	~
] IN6	ON ~		ON	~	E FLAGS	ON	~	FLAG21	ON	✓ □ FLAG37	ON	~
_ IN6	ON v		ON	~	FLAG6	ON	~	FLAG22	ON	V 🗌 FLAG38	ON	~
_ IN7	ON v	00177	ON	~	E FLAG7	ON	V	FLAG23	ON	✓ □ FLAG39	ON	~
_ 1N8	ON ~		ON	~	FLAG8	ON	~	FLAG24	ON	✓ □ FLAG40	ON	~
IN9	ON v	етио 🗌	ON	~	FLAG9	ON	~	FLAG25	ON	V 🗌 FLAG41	ON	~
] IN 10	ON ~		ON	\sim	FLAG10	ON	V	FLAG26	ON	✓ □ FLAG42	ON	~
] IN11	ON ~		ON	\sim	E FLAG11	ON	~	FLAG27	ON	∨ □ FLAG48	ON	~
IN12	ON ~	0UT12	ON	\sim	E FLAG12	ON	~	FLAG28	ON	✓ □ FLAG44	ON	~
IN13	ON ~		ON	\sim	FLAG18	ON	~	FLAG29	ON	✓ □ FLAG45	ON	V
_ IN14	ON ~		ON	\sim	E FLAG14	ON	~	FLAG30	ON	✓ □ FLAG46	ON	~
_ IN 15	ON ~		ON	\sim	FLAG15	ON	~	FLAG31	ON	✓ □ FLAG47	ON	~
IN 16	ON v		ON	\sim	FLAG16	ON	~	FLAG32	ON	✓ □ FLAG48	ON	V
					<							3
NUTION						1	1					
And								Setting List		Cancel		

Example: In the [New Multi select 1] window, select the [IN1] (switch 1) to [IN4] (switch 4) check boxes and select [And].

New Multi Select1(All SW)		
IN ON V	OUT ON	\sim
□ IN1(Sw ON ∨		ON ~
□ IN2(Sw ON ∨ itch2)	☐ OUT2	ON ~
□ IN3(Sw ON ∨ itch3)	🗌 Ουτε	ON V
□ IN4(Sw ON ∨	□ OUT4	
□ IN5 ON ∨		olimited ● And ○ Or

The content of the new multiple selection that has been set will be displayed by clicking "Setting list" on the setting screen.

On the Setting List screen of the new multiple selection, inputs and outputs set to ON are marked with " \bullet ".



< Example of use>

Create the following program:

OUT		C	NDITION1	DURATIO	DN TIME(UNTIL)	
001	1	2	STATE	1	2	OULDELLE
(Example)	IN1 ON	AND IN2 0	F THEN DELAYTIME 3.0 slater	IN3 Turn ON	OR DELAYTIME 5.0 sec	ON
OUT1	New Multi Sel1 ON	-][-][-	THEN D-TIME 0.0 S later	CONDITION1 Turn OFF		ON

When "Switch 1" and "Switch 3" are ON and "Switch 2" and "Switch 4" are OFF, the lamp lights up.







Add FLAG and Old Multi sel

FLAG and old multiple selection are added. It can add to FLAG256, Old Multi Sel 64.

It can be added by clicking the blue arrow which is under FLAG48.

%FLAG49~ FLAG256, Old Multi sel 17~ Old Multi sel 64 can be used only with SIO-N3, SiOt1, SiOt3, SiO2 R2 and SiO-N1 R2. It cannot be used with other controllers.



The message which checks whether FLAG and old multiple selection are added is displayed. O.K. is clicked. FLAG and old multiple selection are added.



The display of FLAG

FLAG45	-] -) -] -)	HEN D-TIME	0.0 s later	CONDITION1	Turn OFF	-	-	-]	ON	
FLAG46	-	-	-	-			HEN D-TIME	0.0 × later	CONDITION1	Turn OFF	-	-	-		ON	
FLAG47	-] -	-] -) [1	HEN D-TIME	0.0 slater	CONDITION1	Turn OFF	-	-	-][ON	
FLAG48	-	-) -	-] -) П	HEN D-TIME	0.0 s later	CONDITION 1	Turn OFF	-	-	-		ON	=
-																



FLAG253	-	-	-]	-	-	THEN D-TIME 0.0 😹 s CONDITION1 Turn OFF	ON
FLAG254	-	-	-	-	-	THEN D-TIME 0.0 🔄 🗯 CONDITION1 Turn OFF – – –	ON
FLAG255	-	-	-]	-	-	THEN D-TIME 0.0 🔄 s CONDITION1 Turn OFF	ON
FLAG256	-	-	-	-	-	THEN D-TIME 0.0 🔄 S CONDITION1 Turn OFF	ON

The display of Old Multi Sel

<parameter></parameter>	ld MultuSelect Rese 📘			
New Multi Select	SiOt series only	Old	Multi Select	• •
13			Open	
14			Open	
15			Open	
16			Open	
-				~



Useful features

Here are some useful features of SiO-Programmer:

(1) Saving project names

<u>You can save project names to the controller.</u> Use project names as notes on what programs are stored on the controller. When you save your settings to a file, the project name is saved separately from the file name. This means that you can simply read the project name from the file and write it to the controller.

sing SiO-P	SiO-Programmer Version 3.60									
File(F)	Edit(E)	Disply(V)								
PROJE	CT Nev	wPrj								

(2) Cut, copy, paste, and reset

In the program window, <u>**right-click**</u> in a row and click [OUT X Reset], [OUT X Cut], [OUT X Copy], or [OUT X Paste] to reset, cut, or copy the output settings in the row where you right-clicked or to paste settings to that row.

Shortcuts are available for some commands.

- Cut: Ctrl + X
- Copy: Ctrl + C
- Paste: Ctrl + V



(3) Checking programs



Position the cursor over the desired numbered output button to see a sentence that describes the output settings.

The sentence also includes I/O notes, making it easy to understand how the program works. *A sentence appears only when the output is enabled.

(4) Internal outputs (FLAGs)

Internal outputs (FLAGs) or the outputs exceeding the available number of outputs (e.g., OUT5 and subsequent outputs in the case of SiO2) cannot be used to output external signals. However, these outputs, which work inside the controller, can be used as conditions.



Take the following program as an example:

In this program, turning on IN1 causes OUT1 to turn on.

<u>When IN1 is turned on</u>, the condition for FLAG1 is met and <u>FLAG1 turns on</u>. When FLAG1 turns on, the FLAG1 signal turns on inside the SiO controller, although the controller shows no change.

This, in turn, meets the ON condition for OUT1 (FLAG1 is ON), causing OUT1 to turn on.

Although normally you can only specify up to two ON conditions, you can specify three ON conditions using the above internal output, as follows:



In this program, turning on IN1, IN2, and IN3 causes OUT1 to turn on.

Specify <u>IN1 and IN2 as the ON conditions for FLAG1</u>, and <u>FLAG1</u> and IN3 as the ON conditions for OUT1.

 $OUT1\ turns\ on\ when\ IN1,\ IN2,\ and\ IN3\ are\ all\ turned\ on.$

Although turning on IN1 and IN2 causes FLAG1 to turn on, only OUT1 appears to turn on, because the controller shows no change.

(5) Insertion of FLAG

In the program window, <u>**right-click**</u> in a row and click [FLAG X Insert], The new FLAG settings on the row where you right-clicked .

New/Old Multi Sel

Before insert

Program window

OUT1	FLAG1 (Relay 1)	ON	-	-	-
OUT2	-	-	-	-	-
FLAG1 (Relay1)	IN1	ON	-	-	-
FLAG2	IN2	ON	-	-	-
FLAG3	-	-	-	-	-
FLAG4	FLAG2	ON	-	-	-
FLAG5	-	-	-	-	-
FLAG6	-	-	-	-	-

🗌 FLAG	ON	\sim
🗹 FLAG	OFF	
E FLAG:	ON	
E FLAG	3	ON

<flag mem<="" th=""><th>10> FLAG MEMD Reset 📃 🛄</th><th></th></flag>	10> FLAG MEMD Reset 📃 🛄	
FLAG	Ether	
1	Relay 1	^
2		
3		
4		

FLAG Memo

Right-click and FLAG Inserts

FLAG1 (Relay1)	IN1 ON - FLAG1 Cut
FLAG2	FLAG1 Copy
FLAG3	FLAG1 Paste
	FLAG1 Reset
FLAG4	FLAG1 Insert
FLAG5	FLAG1 Delete



FLAG1]	-)	-)
FLAG2 (Relay1)	IN1	ON	-
FLAG3	IN2	ON	-
FLAG4	-	-	-
FLAG5	FLAG3	ON	-

 $\label{eq:program} Program \ window \ and \ Multi \ Sel, FLAG \ Memo \ will \ be \ automatically \ edited \ according \ to \ the \ insertion \ of \ the \ flag.$

Program window

OUT1	FLAG1 (Relay 1)	ON	-	<u>ہ</u>	OUT1	FLAG2 (Relay 1)	ON	-
OUT2	-	-	-		OUT2	-	-	-
OUT3	-	-	-		OUT3	-		
FLAG3	_	-	-		FLAG3	IN2	ON	-
FLAG4	FLAG2	ON	-	\square	FLAG4	-	-	-
FLAG5		-	-	4	FLAG5	FLAG3	ON	-
FLAG6	-	-	-		FLAG6	-	-	-
New/O	ld Multi	Sel						
🗌 FLA	GON	\sim			🗌 FLA	GON	\sim	
🗹 FL	AG 1	OFF	\sim	~	🗌 FLA	G1	ON	\sim
🗌 FLA	AG2	ON	\sim		🗹 FLA	G2	OFF	\sim
🗌 FLA	AG3	ON	\sim		🗌 FLA	G3	ON	\sim

FLAG Memo

G MEMO> FLAG ME FLAG Ether	MO Reset						FLAG	Ether			
1 Relay	1			^							
2							2	Relay 1			
3					,		3				
4							4				
				v						- ×	
Atton Inco											
	ert am v	vinc	low]]	New/Old M	Multi Sel	L <f< td=""><td>LAG MEMO</td><td>FLAG MEND Reset</td><td>mo</td><td></td></f<>	LAG MEMO	FLAG MEND Reset	mo	
Progra	ert am v	vinc	low] _	New/Old M	Multi Sel	L <f< td=""><td>LAG MEMO</td><td>FLAG MEI FLAG MEMO Reset</td><td>mo</td><td></td></f<>	LAG MEMO	FLAG MEI FLAG MEMO Reset	mo	
	ert am v	vinc	low 		New/Old M	Multi Sel	L <f< td=""><td>LAG MEMO</td><td>FLAG MEND Reset</td><td>mo</td><td></td></f<>	LAG MEMO	FLAG MEND Reset	mo	
Progra	ert am v	vinc	low 		New/Old N	Multi Sel	L <f< td=""><td>LAG MEMO</td><td>FLAG MEND Reset</td><td>mo</td><td></td></f<>	LAG MEMO	FLAG MEND Reset	mo	
Progr. DUT1 FL462 (Redey1) DUT2 - LAG1 - LAG1 - LAG1 - LAG3 IN1	ert am v	vind	low - - -		New/Old M FLAG ON FLAG1 FLAG2	Multi Sel	(<f< td=""><td>LAG MEMOD FLAG E 1 2 3</td><td>FLAG MEND Reset ther Relay 1</td><td>mo</td><td></td></f<>	LAG MEMOD FLAG E 1 2 3	FLAG MEND Reset ther Relay 1	mo	
Progr.	ert am v ON - ON ON -	vinc	low 		New/Old N FLAG ON FLAG1 FLAG2 FLAG3	Multi Sel	L <f< td=""><td>LAG MEMOO FLAG E 1 2 3 4</td><td>FLAG MEMO Reset</td><td>mo</td><td></td></f<>	LAG MEMOO FLAG E 1 2 3 4	FLAG MEMO Reset	mo	
FLAG2 (Reley 1) DUT1 FLAG2 (Reley 1) DUT2 - LAG1 - TAG2 IN1 LAG3 IN2 LAG4 - LAG5 FLAG3	am v	vind	low 		New/Old N FLAG ON FLAG1 FLAG2 FLAG3	Multi Sel	(~	LAG MEMOO FLAG E 1 2 3 4	FLAG MEMO Reset	mo	

New multiple selection shifts the checked FLAG and its ON/OFF setting, and old multiple selection shifts the checked FLAG downward by one.

*Cannot be inserted in the following cases

The conditions that it can't be inserted are the case which isn't being Add FLAG and MultiSel and a performed case, and it's different. For details on adding FLAG and Multi sel, see P31 Add FLAG and Multi sel.

■ If not Adding FLAG and Multi Sel

- 1. If the FLAG48 is valid and the program is entered
- 2. If the FLAG48 is invalid but the program is entered
- 3. If the FLAG48 is valid and no program is entered
- 4. If the FLAG48 Memo is entered
- 5. If the FLAG48 is used in Program Window
- 6. If the FLAG48 is used in Multi Sel

■ If Adding FLAG and Multi Sel

1. If the FLAG256 is valid and the program is entered

2. If the FLAG256 is invalid but the program is entered

3. If the FLAG256 is valid and no program is entered

4. If the FLAG256 Memo is entered

5. If the FLAG 256 is used in Program Window

6. If the FLAG 256 is used in Multi Sel

(6) Delete of FLAG

In the program window, <u>**right-click**</u> in a row and click [FLAG X Delete], The selected FLAG is deleted and new FLAG settings in last row.

Like insertion of FLAG, Program window and Multi Sel,FLAG Memo will be automatically edited according to the delete of the flag.

Before delete						
Program window	New/Old Multi Sel FLAG Memo					
FLAG1	FLAG ON	\sim	<flag memo=""> FLAG Ethe</flag>	FLAG MEMD Reset 🔛 🛄 —		
FLAG2 IN1 ON FLAG46	FLAG1	$on \sim$		^		
FLAG3 FLAG47		055	2	Relay 1		
FLAG4 FLAG48 IN2 ON		UFF V	3			
	FLAG3	$\rm on~\sim$	4	,		
Right-click and FLAG Delete						
FLAG1		FLAG1 (Relay 1)	N1 ON			
FLAG2 FLAG1 Cut (Relay 1) FLAG1 Com		FLAG2		-		
FLAG3 FLAG1 Paste		FLAG3		-		
FLAG4 FLAG1 Reset	4	FLAG4				
FLAGI Insert		ELAG5				
FLAG45 - - FLAG46 - - FLAG47 - -	\triangleright	FLAG45 FLAG46 FLAG47	- - IN2	- - 0N		
FLAG48 IN2 ON After Delete		FLAG48	-	-		
Program window	New/Old Mu	lti Sel	F	LAG Memo		
(Relav1) IN1 ON -	FLAG ON	\sim	<flag memo=""> FLAG Et/</flag>	FLAG MEMO Reset 📃 🛄 Ier		
FLAG2	🗹 FLAG1	OFF \sim	1	Relay 1		
FLAG3	FLAG2	$on \sim$	2			
FLAG4	🗌 FLAG3	$\rm ON ~ \sim$	4	、		
FLAGb						

The new multiple selection shifts the checked FLAG and its ON/OFF setting, and the old multiple selection shifts the checked FLAG up by one.

Cannot be inserted in the following cases

- 1. If the Selected FLAG is valid and the program is entered
- 2. If the Selected FLAG is invalid but the program is entered
- 3. If the Selected FLAG is valid and no program is entered
- 4. If the Selected FLAGMemo is entered
- 5. If the Selected FLAG is used in Program Window
- 6. If the Selected FLAG is used in Multi Sel

(7) Start by a double-click of a configuration file

SiO-Programmer can be started in the state which made setting data reflected by a double-click of a configuration file

I/O Monitor

The I/O monitor enables you to monitor the I/O status. You can display the I/O monitor by clicking the monitor icon at the top right of the window. The I/O monitor can be used only when the controller and your computer are connected.

On the I/O monitor, you can check whether the controller is in the RUN state, check the ON/OFF status of the inputs and outputs, or force OUTs or FLAGs to turn on. You can also save changes in the I/O status to a CSV file. The names of inputs and outputs will be replaced with the notes you enter in the program window. At the bottom of the monitor window is an I/O monitor that looks similar to the program window.



I/O logging

IO LOGGING allows you to record changes in the I/O status.

$ \begin{array}{c c} Rec & Stop & Pause \\ $	
(1) (2) (3) (5) (6)	
(1) (2) (3) (5) (6)	
(1) Record	
Click this better and enter a file name to start lagring	
During logging, any changes in the I/O status are written to a CSV file in real time	Noto
that you cannot addi the file during logging	note
You can also use this button to resume logging after clicking the [Pause] button	
Stop	
(2) Stop (
This button stops logging.	
Once you stop logging, you can edit or move the CSV file.	
Pause	
(3) Pause	
This button pauses logging. Click the [Rec] button again to resume logging, or click	the
[Stop] button to stop logging.	
(4) Elansed time display $0000000 = 0000000$	
This area displays the alarged time device benefits are the new sining time if	
solect the [Sot recording time] sheek box	you
The area is shown in red during logging in red with a blue border during a nause	nd in
blue when recording is stopped.	tina ini
and and a second s	
(5) I/O selection check box 🔲 Select 10	
Use this check box when you want to record changes only in inputs and outputs of y	our
choice. By default, the status of all inputs and outputs is recorded. When you select	the
check box, the display will change as follows:	
▼INPUT CHECK	
	~

Select the check boxes for the inputs and outputs whose status you want to record.

FLAG5

FLAG CHECK

📝 FLAG1 📝 FLAG2 📝 FLAG3 📝 FLAG4 📝 FLAG5

(6) Set recording 1 🔲 Recoding Time

FLAG2

FLAG3

FLAG4

VFLAG CHECK 🕜

FLAG1

Select this check box to automatically stop recording after the time period you specify. Even if you set a time period, this option is disabled until you select the check box.

Simulator

The simulator shows how the settings you configured in SiO-Programmer work. Use the simulator to check whether your settings work as intended before actually using the controller. Since the simulator runs on your computer, **you can use it without connecting the SiO controller**.

Clicking the simulator icon at the upper right of the program window displays simulation windows—an I/O display window and input box.

In the input box, click [RUN] and any of the inputs (IN1 to IN16) to start simulation.



Multi sel] to see which inputs and outputs are selected. Also, only the new multiple selection will be displayed as ON setting as " \bigcirc " and OFF setting as " \bigcirc "(\rightarrow Page 36).



<and></and>	lew Multi Sela	ect01 ON	
●IN1		●IN3	
Display of ON	√OFF settin;	g: ON→●, OFF→○	

Search and Replace

Search and Replace is a feature which searches for the I/O and replaces with another I/O. Clicking the Search and Replace icon at the upper right of the program window or Pressing Ctrl +F, Ctrl +H display Search and Replace window.

If you click the search and replace icon or press Ctrl + F, the search tab is displayed. If you press Ctrl + H, the replace tab is displayed.



③ Search(New/Old Multi select)

If there is a multi select which setted Search word, Multi select window display.

After editing settings, Press the OK button to save the settings.

Multi Sel Search				22					
Multi Sel2 M	fulti Sela								
IN IN	V OUT	FLAG							
🔲 IN 1	🔽 ΟΠΤΙ	FLAG1	FLAG17	FLAG33					
IN2	V OUT2	FLAG2	FLAG18	FLAG34					
IN3	V OUT3	FLAG3	FLAG19	FLAG35					
IN4	V OUT4	FLAG4	FLAG20	FLAG36					
IN5	V OUT5	FLAG5	FLAG21	FLAG87					
IN6	V OUT6	FLAG6	FLAG22	FLAG38					
IN7	W OUT7	FLAG7	FLAG23	FLAG39					
IN8	V OUT8	FLAG8	FLAG24	FLAG40					
IN9	🔽 ОИТ9	FLAG9	FLAG25	FLAG41					
IN 10	VUT10	FLAG10	FLAG26	FLAG42					
IN11	☑ OUT11	FLAG11	FLAG27	FLAG43					
IN 12	OUT12	FLAG12	FLAG28	FLAG44					
🔲 IN 13	VOUT13	FLAG13	FLAG29	FLAG45					
🔲 IN 14	OUT14	FLAG14	FLAG80	FLAG46					
🔲 IN 15	☑ OUT15	FLAG15	FLAG31	FLAG47					
IN 16	☑ OUT16	FLAG16	FLAG32	FLAG48					
CONDITION And Or									
	OK								

<Replace>



4 Replace All

-

When an Replace-All button is clicked, The same I/O as the selected search word replaced with the replaced word.

If there is a new/old multi select which setted Search word,

Output Cond	ition settings	Program	Reset				2	Output Cond	ition settings	Program	Reset
OUT					CONDIT	ION1		OUT			
001	1			2					1		
(Example)	INI	ON	AND	IN2	OFF			(Example)	IN1	ON	AND
OUT1	RUN	ON	-	-] –]			OUT1	RUN	ON	-
OUT2	OUT1	ON	-	-	-			OUT2	IN1	ON	-
OUT3	FLAG2	ON	AND	OUT1	ON			OUT3	FLAG2	ON	AND
OUT4	IN1	ON	OR	IN2	ON			OUT4	IN1	ON	OR

New/Old Multi select

IN IN	OUT	IN IN	🔲 ООТ
🔲 IN1	VOUT1	🔽 IN 1	🔲 OUT1
IN2	VOUT2	IN2	V OUT2
IN3	V OUT3	IN3	V OUT3

*Please be careful about the following point.

- OFFCondition is not able to replace with INIT.
- The setting of multi select is not able to replace with RUN, INIT, Ether.
- The new/old multi select which has setting replace word is not able to replace.
- The replacement to D-TIME, T1, T2 cannot be performed.

Program screen

CONDITION1

_

_

ON

ON

2

_

IN1

IN2

Onscreen Messages

A message like the one shown below appears if an error occurs, such as when a program is incorrect or the SiO controller is not connected.

UN&OFF ALTERNATION [0.2sec=100.0sec(ON+OFF)]	
No. ON TIME OFF TIME	,

If an error message appears, check the following and eliminate the cause.

Message	Description		
A read error has occurred.	Your computer has failed to communicate with the SiO		
Failed to read.	controller.		
Failed to write.	1. Check that the SiO controller and your computer are		
Failed to communicate.	connected and that the SiO controller is turned on. If they are connected, make sure that the USB cable is not damaged		
Unknown command			
SIO Controller is not connected.	 You may be using an older version of the PC software or device driver. Uninstall both the device driver and PC software (page 10), and download the latest installer from SUS's website. 		
No driver is installed.	Your computer does not recognize the SiO controller because no device driver is installed or because the device driver is not working properly. Uninstall both the device driver and PC software , and download the latest versions of the software and device driver from SUS's website.		
Cannot write during RUN.	When the SiO controller is in the RUN state, you cannot write a program to the controller. Turn off the RUN switch on the controller before writing a program.		
Check the Red data then setting.	You cannot write the program to the controller because the program is not configured correctly. Check and correct the settings for the items highlighted in red.		
The following outputs are unset	You cannot write the program to the controller because the program is not configured correctly. Check the output program listed in the message.		

Message	Description
Version x.xx and later of the SiO controller are not supported. Download the latest version of SiO-Programmer from SUS's website.	Your version of SiO-Programmer is not supported by the connected controller. Install the latest version of SiO-Programmer that works with the controller.
Failed to force output.	The SiO controller may be turned off, or the USB cable
Failed to obtain the I/O status.	may be disconnected or damaged.
Install Adobe Reader.	Clicking the Help button displays this manual in PDF format. You cannot view the manual on a computer that does not have Adobe Reader installed.
The language file is corrupted.	The help file or language file for SiO-Programmer is
The help file is corrupted.	corrupted and cannot be read. Uninstall SiO-Programmer and reinstall it.
Do you want to write this program?	This message appears if you click the [登録 Write] button when the program is not configured.
Cannot run multiple instances of SiO-Programmer.	You cannot run multiple instances of SiO-Programmer at once.
It is not supported by your controller(After Ether9).	Displayed when trying to write Ether9 or higher while connecting the SiOt Ver3.00 controller.
For your controller, switch the address / port setting to manual and register.	Displayed when trying to write the address / port settings automatically while connecting the SiOt Ver3.00 controller.
The automatic / manual setting of the address / port has been switched. To reflect this, you need to turn off the power of the controller and restart it.	Displayed when the pre-registered automatic / manual setting and the registered one are different while connecting a controller of Siot series Ver3.10 or higher.
Your controller does not support the memo registration function.	Each SiO controller (excluding SiO C and SiO 3.2) is displayed when you try to read / register including a memo while connecting a controller earlier than Ver3.60.
You can use up to FLAG48 old multiple selection 16 with your controller.	Displayed when FLAG49, old multiple selection 17 or more is registered while a controller other than SiO-N3, SiO t1, SiO t3, SiO2 R2 is connected.
For your controller, the timeout setting is not implemented, so switch it to disabled and register.	Displayed when trying to register with the timeout setting enabled while connecting a controller earlier than Ver3.60 of the SiOt series.
The controller cannot be recognized. Please check the following items.	Check the display items because the SiO controller cannot be recognized.
The device driver is not installed. Please uninstall the device driver and the PC software, and download them again from the SUS HP.	Since the device driver cannot be found, uninstall the device driver and SiO-Programmer once, and then download again from the SUS HP.

Message	Description
Communication processing failed. Check if another SiO-Programmer is communicating.	This is displayed when other software is communicating with the SiO controller connected to the PC.
 Only the following controllers can use the New Multiple Selection. SiOt1, SiOt3, SiO-N1 R2 version 3.70 or higher 	This message is displayed when attempting to register a controller that is not listed in the message with New Multiple Selection set in the program.

Inquiring about SiO-Programmer

If you have any problems with or questions about *SiO-Programmer*, please e-mail us at:

<u>sus-sales@sus.co.jp</u>

Revision History

Version	Date	Description	Revised Pages
1.00	<i>`16/06/01</i>	Initial release	
1.01	<i>`16/08/30</i>	[Change Point]	
		• Language name (JAPAN \rightarrow JAPANESE) changed	
		[Changes]	
		Setting examples — Corrected the T1 setting in Example 3.	25
		Useful features — Corrected the description in "(4) Internal outputs".	41
1.10	'16/12/15	[Change Point]	
		• Supports cutting, copying, and pasting of programs	
		\cdot Change the monitor to full screen display	
		• Parameter setting (interval / ON time \rightarrow ON time / OFF time) notation change	
		[Changes]	
		General — Replaced images with those from SiO-Programmer version 1.10.	7~
		Details of each item — Changed "Interval/ON time" to "ON time/OFF time".	25
		Useful features — Added cut, copy, and paste.	40~42
		I/O monitor — Updated the information to indicate that the settings window monitor is displayed from the beginning.	45
		Messages — Added "Driver installation".	51
1.11	'17/01/10	[Change Point]	
		 Changed the initial display resolution to 1280 × 768 	
		[Changes]	
		System requirements — Changed the display resolution from 1024×768 to 1280×768 .	6
2.00	'17/03/01	[Change Point]	
		• SiO-Programmer main screen design change	
		Addition of counter function	
		Simulation function added	

		• Change from 1 OFF condition to 2	
		• Changed the initial display resolution to 1366 x	
		768	
		[Changes]	
		Updated the information to cover the features	
		added to SiO-Programmer version 2.00:	
		• Added the counter feature.	20, 23~
		• Added the simulation feature.	47
		• Increased the number of OFF conditions	20, 23~
		• Improved ease of use	15~
			10
		SiO-Programmer version 2.00.	14~
		System requirements — Changed the display	6
0.10	(15/04/05	resolution from 1280×768 to 1366×768 .	
2.10	17/04/27	[Change Point]	
		• Display the SiO controller version on the	
		SIO-Programmer screen	
		[Changes]	
		Introduction — Changed the revision number from 1.11 to 1.xx.	4
		Program window — Added information about CT version number.	13
		Tool icons — Added "File", "Print", and notes.	14
		SiQ controller/SiQ-Programmer compatibility	16
		table — Added	
		Editing data — Added descriptions of internal outputs and SiO2.	17
		Parameter settings — Added a diagram of INIT time.	27
		Useful features — Added commands, Changed	40~49
		the description of internal outputs.	40 42
2.20	'17/06/30	[Change Point]	
		• Added input / output logging function to the monitor	
		• Supports overwrite installation	
		[Changes]	
		Installing SiO-Programmer — Added a	7
		description of how to update SiO-Programmer.	1
		I/O logging — Added	16
		Onscreen messages — Added	40 5955
2 30	<u>'17/09/01</u>	[Change Point]	00~00
2.00	11/00/01	• FIAC googe abarged from 16 moints to 22	
		points	

		[Changes]	
		General — Changed the number of internal outputs from 16 to 32.	19~
2.40	'18/01/05	[Change Point]	
		 Changed the initial display resolution to 1280 x 768 	
		[Changes]	
		System requirements — Changed the display resolution from 1366×768 to 1280×768 .	6
2.50	'18/06/26	[Change Point]	
		Added SiO controller (SiO-N1)	
		 Compatible models 64Bit, Windows 8.1 / 10 added 	
		[Changes]	
		System requirements — Added 64-bit versions and Windows 8.1 and 10 to the computer models.	6
		Editing data — Added a description of SiO-N1.	17~
3.00	'19/01/28	[Change Point]	
		• Changed the number of internal outputs from 32 to 48.	
		• Changed the maximum number of counts from 100 to 50000	
		• Timer setting upper limit changed from 300.0 seconds to 6000.0 seconds	
		[Changes]	
		Details of each item — Added a description of the multiple selection option. Changed the number of counts. Changed the timers.	22~
		General — Changed the number of internal outputs from 32 to 48.	19~
		I/O monitor — Added a description of monitoring controls.	45
3.10	'19/06/28	[Change Point]	
		• Added an alternate function to the forced output of the monitor	
		[Changes]	
		I/O monitor — force output.	45
3.20	'19/10/29	[Change Point]	
		• Tool (search, replace) function added	

		[Changes]	
		Starting SiO-Programmer	
		—Program Window Image Change,	12
		Program Window	
		—Program Window Image Change,	13
		-Edited explanation of FLAG	13
		Tool Icons	
		—Program Window Image Change,	14
		—Added explanation of search and replace fanction	15
		Editing Data	
		—deleted explanation of FALG display	18
		Search and Replace	
		—Added explanation of search and replace feature	48
3.30	<u>'20/02/27</u>	[Change Point]	
		Added tool (undo, redo) function	
		• Addition of startup from the configuration file	
		FLAG insertion / deletion function added	
		• Addition of search items (time, T1, T2)	
		[Changes]	
		Starting SiO-Programmer	
		—Program Window Image Change,	12
		Program Window	
		—Program Window Image Change,	13
		Tool Icons	
		—Program Window Image Change,	14
		—Added explanation of undo fanction	15
		and redo fanction	
		Window for creating programs	
		—Program Window Image Change,	17,18
		Useful features	
		—Added explanation of Insertion of FLAG	$40 \sim 42$
		—Added explanation of Delete of FLAG	
		-Added explanation about Starting by a	
		double-click of a configuration file	
		Added of the second item (time, T1 and T2)	
		-Auteu of the search item (time, 11 and 12)	48,49

3.40	[•] 20/09/07	[Change Point]	
		Added SiO controller (SiOt, SiO-N3)	
		• Ether signals 1 to 8 added	
		Addition of address / port settings	
		[Changes]	
		SiO Controller/SiO-Programmer Compatibility Table	
		• Compatibility of saved files between different	
		Compatible table Edit	16
		Window for creating programs	18~
		—Added explanation of internal outputs	10
		Creating an I/O program	
		\cdot CONDITION1	
		-Edit the number of FLAGS	$22,\!24$
		-Add Ether	
		\cdot DURATION TIMES	
		-Edit the number of FLAGS	
		—Added Ether	
		Parameter settings	
		-Parameter setting image change	
		-Added explanation of Address and Port	27, 28
		Added explanation of Add FLAG and Multi sel	39
3.41	^(21/03/17)	[Change Point]	
		Addition of precautions after USB	
		[Changes]	
		Connecting a USB cable	12
3 51	⁽ 91/06/11	-Added notes after USB communication.	
0.01	21/00/11	Chahanged the number of Ether signals from	
		8 to 64	
		Addition of DHCP function	

		[Changes]	
		SiO Controller/SiO-Programmer Compatibility	
		Table	
		Compatibility Table	16
		-Controller added (SiO3.2, SiON3, SiOt)	
		—Added SiO-Programmer 3,51	
		-Change the number of Ethers for ON and	22~
		OFF conditions	
		Parameter settings	20
		-Added explanation about automatic / manual	28
		setting of addresses	
3.52	'21/07/02	[Change Point]	
		• None	
		[Changes]	
		SiO Controller/SiO-Programmer Compatibility	
		Table	
		Compatibility Table	16-
		—Added SiO-Programmer 3,52	10~
3.53	'21/08/10	[Change Point]	
		Added SiO controller (SiOt1, SiOt3)	
		[Changes]	
		SiO Controller/SiO-Programmer Compatibility	
		Table	16
		Compatibility Table	10
		—Controller added (SiOt1, SiOt3)	
		—Added SiO-Programmer 3,53	
3.60	'21/11/30	[Change Point]	
		Added SiO controller (SiO2 R2)	
		Added MEMO reading / registration function	
		• Added timeout setting for Ethernet	
		communication	
		Added controller name display for Ethernet communication	
		• Add message	
		[Changes]	
		SiO Controller/SiO-Programmer Compatibility	
		Table	16
		Compatibility Table	
		—Controller added (SiO2 R2)	
		—Added SiO-Programmer 3,60	

		Input / Output memo	
		• About reading / registering memos to the	27
		controller	
		Parameter settings	$30 \sim 31$
		Ethernet communication timeout setting	32
		• About the controller name for Ethernet	
		communication	
		Message display	51
		• 「Your controller does not support the memo	
		registration function.	51
		• 「You can use up to FLAG48 Multiple	
		Selection 16 on your controller.	51
		• The timeout function is not available on your	
		controller.	51
		• 「Unable to recognize the controller. Please	
		check the following items.	51
		• The device driver is not installed. Please	
		uninstall the device driver and the PC	
		software, and download them again from	52
		the SUS HP.J	
		• Communication processing failed.	
		Check if another SiO-Programmer	
		is communicating.	
3.62	<i>'22/06/27</i>	[Change Point]	
		• System requirements	
		[Changes]	
		Addition of supported computer models	Da
		—Add windows 11	Ľб
		SiO Controller/SiO-Programmer Compatibility	D10
		Table	F16
		-Version update	
	1	-	

	1		
3.70	'22/08/29	[Change Point]	
		Added New Multiple Selection	
		• Vietnamese language support	
		[Changes]	
		Multiple Selection \rightarrow Old Multiple Selection	
		Added New Multiple Selection	
		Added Vietnamese to supported languages	
		SiO Controller/SiO-Programmer Compatibility	Die
		Table	P16
		Compatibility Table	
		Message display	P52
3.71	'22/11/30	[Changes]	
		SiO Controller/SiO-Programmer Compatibility	
		Table	P16
		Compatibility Table	
		Message display	P52
3.72	'23/1/25	[Change Point]	
		• Thai language support	
		[Changes]	
		Added Thai to supported languages	P15
		SiO Controller/SiO-Programmer Compatibility	D1c
		Table	1 10
		Compatibility Table	