

AU9290Meister

Users Manual

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1. Overview

AU9290 Meister (code number: EU3907) assists you to set-up AU9290 and making a trial operation. This manual provides comprehensive information for it.

In first 4 Chapters, from 1~4, we describe about installation of AU9290 Meister, and in Chapters from 5 to 6 describe about actual manner to use it.

When the software doesn't work well, please refer to Chapter 7 「Trouble shooting」 .

2. Operating requirements

The followings are necessary to run AU9290 Meister.

2.1. PC

- AU9290 Meister runs on PC with a Windows® Vista SP1 or Windows® 7 32bit or 64bit operating system.

(Administrator rights are required to install and configure the driver for 「Virtual COM Port」 .)

Note 1: AU9290 Meister verification at Windows 8 is unconfirmed.

- The computer screen resolution should be 1024 × 768 DPI or more.

2.2. USB Cable

A USB cable is necessary to connect AU9290 with your computer.

Use a Type A to Mini-B USB cable. (commercially available.)

3. USB port setting

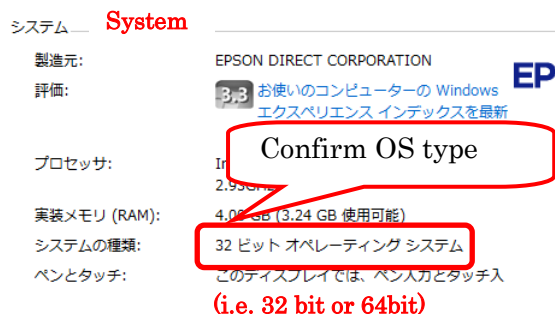
The 「Virtual COM Port Driver」 needs to be installed to connect AU9290 with PC.

3.1. Installation of 「Virtual COM Port Driver」

First of all install Virtual COM Port driver for the communication between the PC and AU9290. This procedure depends on the OS type of your PC.

- (1) Open the Windows 「Start」 menu, right-click on 「Computer」 , select 「Properties」 . (Alternatively, open the Windows 「Start」 menu, select 「Control Panel」 and 「System and Security」 and click 「System」 .)

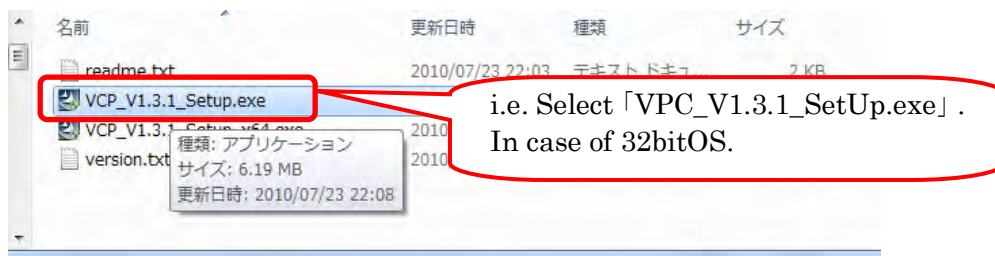
Please confirm OS type. (i.e. 32 bits or 64bits)



(2) Please open the folder 「AU9290Meister_verXXX/USBDriver/ 」 in free provided software package, and select a correct file from 2 files.

「VCP_V1.3.1_SetUp.exe」 : for 32bitOS

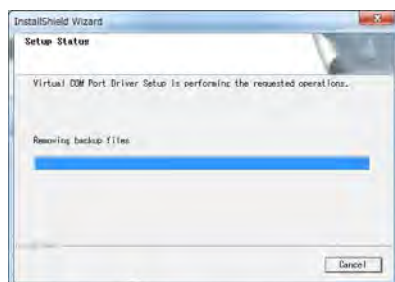
「VCP_V1.3.1_SetUp_x64.exe」 : for 64bitOS



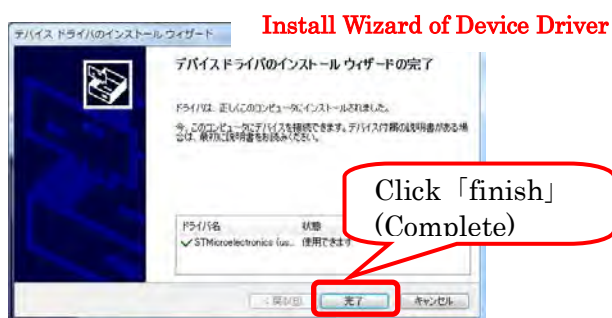
(3) The warning message will appear, but please proceed with the installation. At the 「InstallShield Wizard」 screen, click 「Next」 to continue.



(4) Running 「Setup Status」, display will change to 「install wizard of Device Driver」. Click 「Next」 to continue.



(5) When the installation is complete, click 「Finish(Complete)」 to end the 「Install Wizard of Device Driver」 program.



All are completed for USB driver 「Virtual COM Port」 installation.

3.2. Installation of Device Driver

Install Device Driver next to make USB connection.

There are 2 methods to install Device Driver. If the method 3.2.1 does not work, please try the method 3.2.2. However, in the case of 3.2.2, you must have administrator rights.

3.2.1 Automatic installation of Device Driver

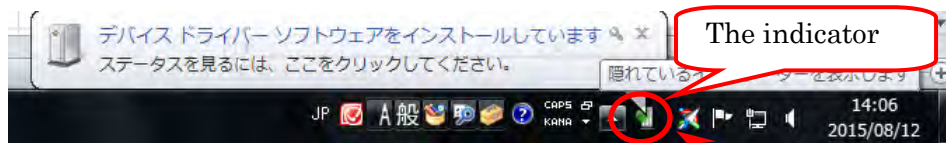
- (1) Please connect the computer and AU9290 with a USB cable as Fig 1, and then turn on the power of AU9290.



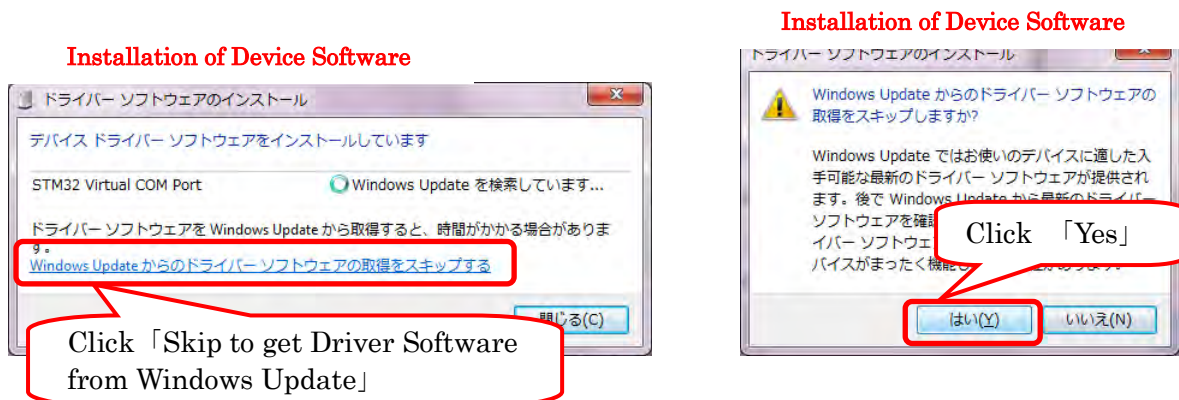
Fig 1 Connection of the computer and Driver

- (2) A message such as the one below will be displayed, and the computer will recognize the new hardware and automatically begin device driver installation.

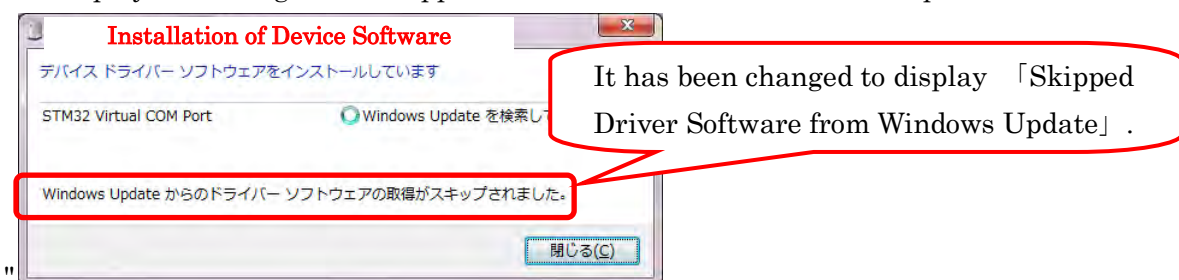
During the Installation of Device Software
Click here if view the status.



- (3) Driver software is automatically installed, and it can't be stop on the way to finish. It takes about 5 minutes. The following methods are effective to shorten time.
- (4) After starting installation, please open the indicator in Task Bar. (See above) Please click 「Skip to get Driver Software from Windows Update」, and click 「Yes」 to continue.



- (5) Display will change to 「Skipped Driver Software from Windows Update」 .

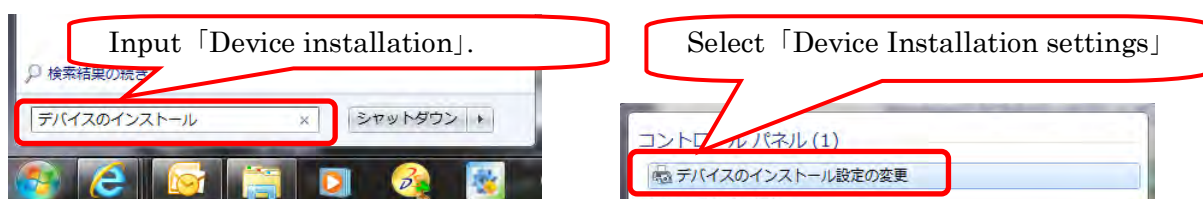


- (6) When the 「Ready to use」 window will be displayed, click 「Close」 to end the installation of Device Driver Software .



3.2.2 Manual installation of Device Driver

- (1) Prior to the manual installation, you need to change device installation settings. Open the Windows 「Start」 menu, please input 「Device installation」 in 「Search programs and files」 . The following window will be displayed as 「Change of Device installation Settings」 (「Device and Printer」 on Control Panel), please click it.



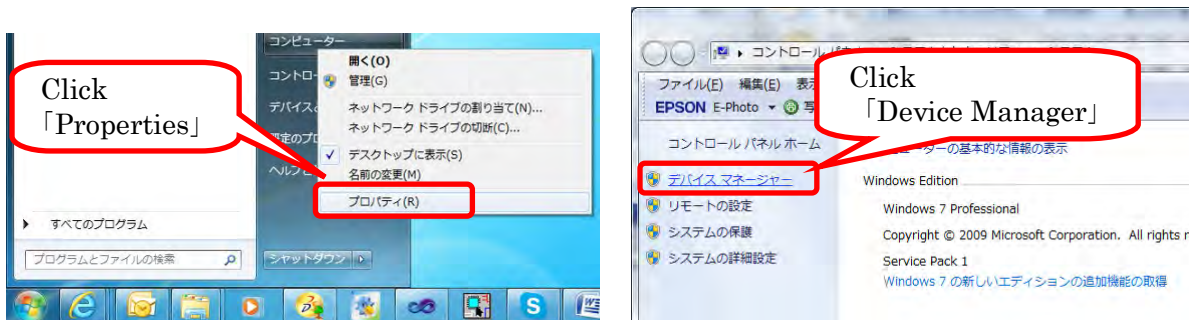
- (2) A new window pops up asking you whether you want Windows to download driver software. Click to select 「No」 , let me choose what to do, select 「Never install driver software from Windows update」 , and then click 「Save Changes」 .
Note: To execute 「Save Changes」 , Administrator authority is necessary.



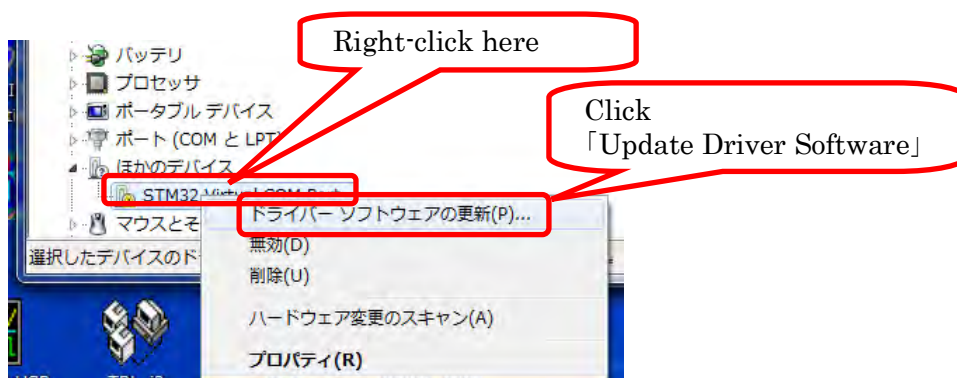
- (3) Please connect the computer and AU9290 with a USB cable as 3.2.1(1), and then turn on the power of AU9290.

(4) Start 「Device manager」. Open the Windows 「Start」 menu, right-click on 「Computer」, select 「Properties」 .

(5) Click 「Device Manager」 on the window that appears.



(6) Right-click on 「STM32(or STMicroelectronics) Virtual COM Port」 in 「Other Device」, and select 「Update Driver Software」 .



(7) Select the 「Browse my computer for driver software」 on the window that appears.



(8) Click 「Browse...」 and select following folder.

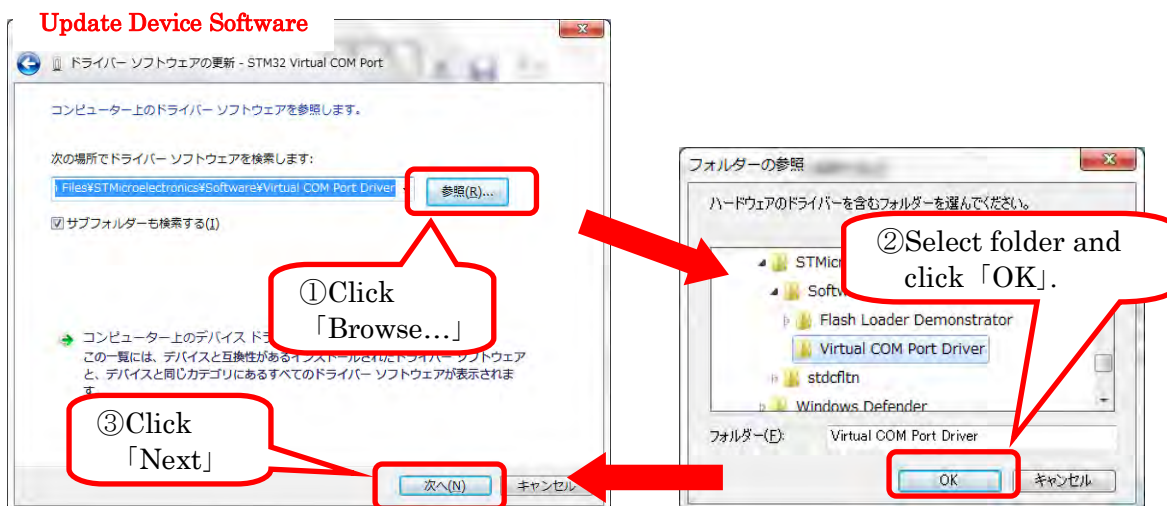
In case of 32bitOS :

C:\Program Files\STMicroelectronics\Software\Virtual COM Port Driver

In case of 64bitOS :

C:\Program Files (x86)\STMicroelectronics\Software\Virtual COM Port Driver

(9) Please click 「Next」



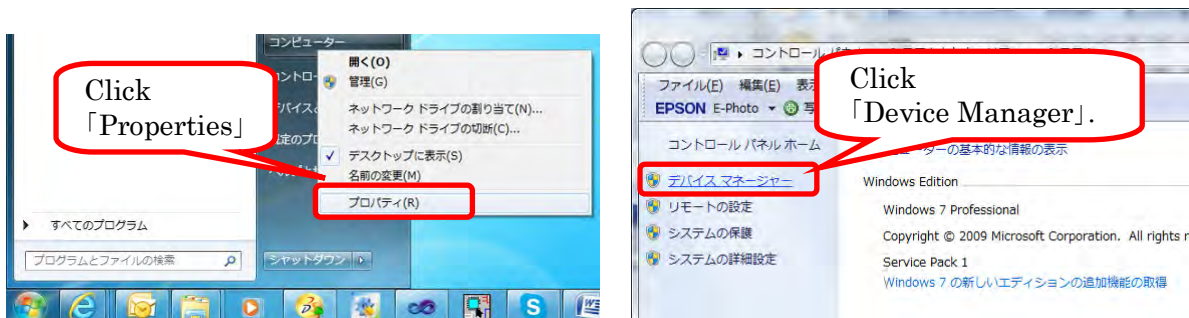
(10) When the installation is complete, click 「Close」 to end the 「Update Device Software」.



3.3. Confirmation of COM Port name.

In order to make communication with AU9290, you must confirm COM Port name.

- (1) Please connect the computer and AU9290 with a USB cable as 3.2.1(1), and then turn on the power of AU9290.
- (2) Open the Windows 「Start」 menu, right-click on 「Computer」, and select 「Properties」.
- (3) Click 「Device Manager」 on the window that appears.



- (4) Click 「Port」

You will see several COM port names are displayed.

Find the COM port name indicated 「STMicroelectronics Visual COM Port」.

The COM port name is used for PC to make communication with AU9290.

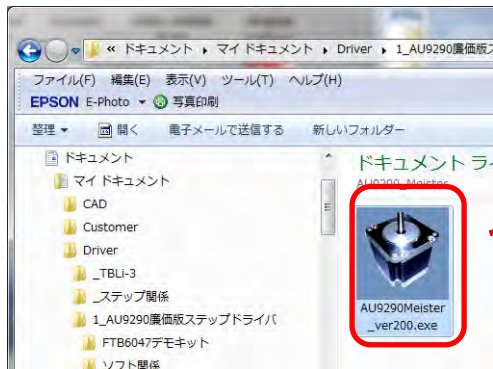


4. How to change language

Both Japanese and English are available for AU9290 Meister ver 2.00 or more.

Change language as follows.

(1) Start 「AU9290Meister_verxxx.exe (ver.200 or more)」 .

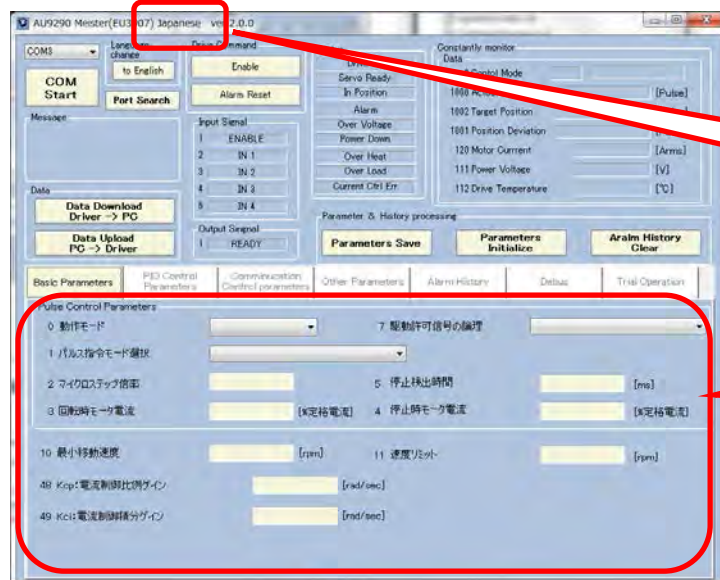


Start 「AU9290 Meister」
ver. 200 or more

(2) This is starting display



(3) This display is coming up next. (Actual operation display) 「Japanese」 is selected at first.



「Japanese」 is
indicated here at first.

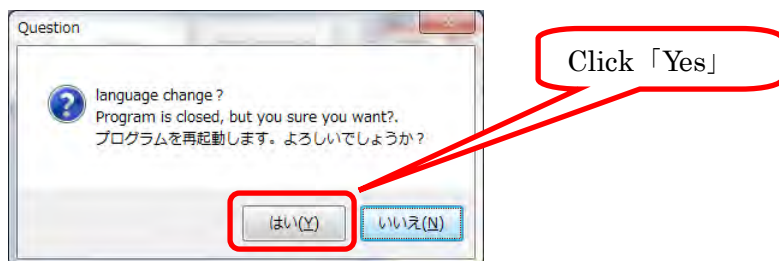
Japanese

(4) In order to change language to English, click 「to English」 .

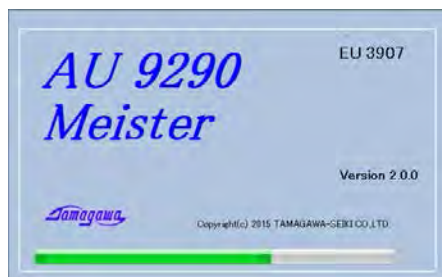


Click 「to English」

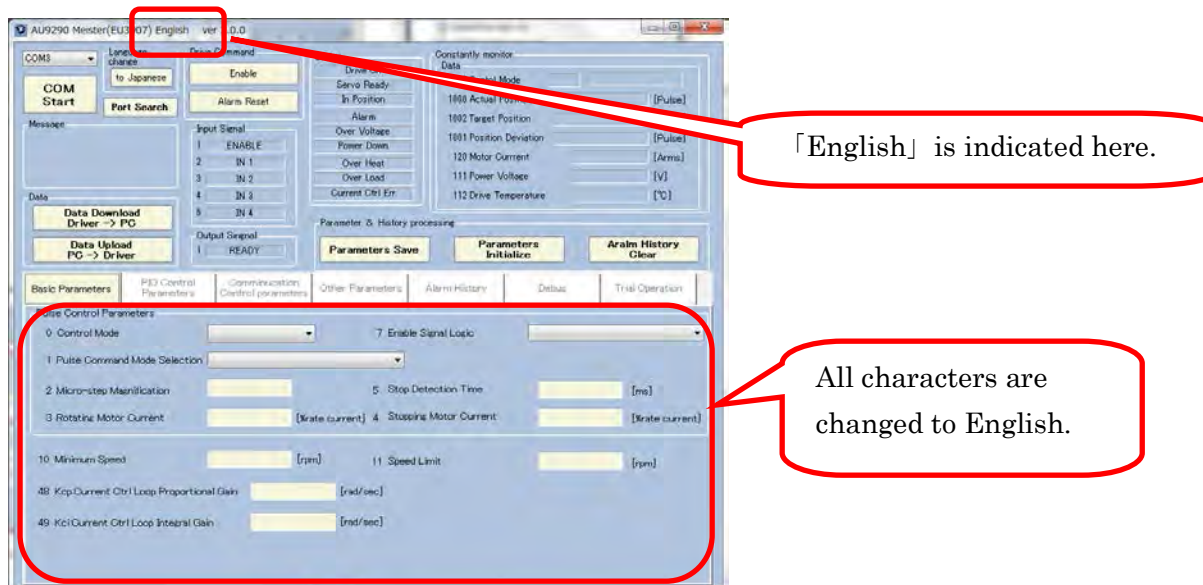
(5) Click 「Yes」



(6) Restart software



(7) This display is coming up next by English mode.



Language is changed to English from now on.

5. Using AU9290Meister

5.1. Introduction

This Chapter describes basic manner to use AU9290Meister. Detail settings for other functions are described in Chapter 6.

5.2. Communication Connection

5.2.1 Display explanation

The indicators below show about communication connection between PC and AU9290 Driver.



Port name connect with PC.

: Port names list will be indicated by clicking here.

「COMStart」 : Communication connection will be started by clicking this button.

「PortSearch」 : Please click this button if you cannot find the expected port name. (See chapter 3.3)

5.2.2 Connection methods

- (1) Confirm if port name is correct. (See Chapter 3.3)
- (2) Otherwise, click port name and select the correct it.
- (3) If you cannot find the port name, please check connection line and power of AU9290. And then click 「PortSearch」 button.
- (4) Click port name button again and select your port name.
- (5) click 「COMStart」 button.
- (6) When communication connection is finished successfully, the color will be changed to right green and the indication is changed to 「COMStop」 .



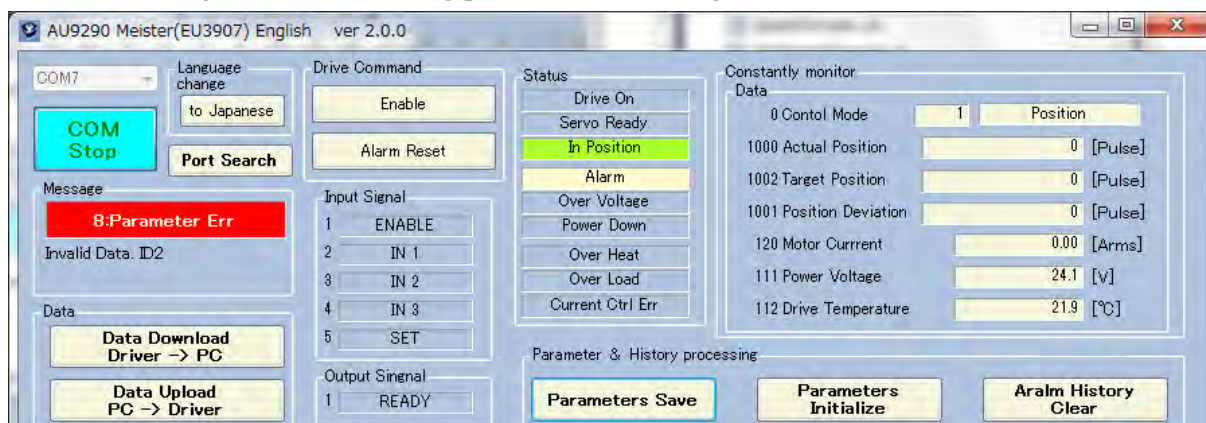
When port name button clicked: (2)



When connected successfully: (6)

5.3. Message

When some alarms is detected in AU9290, the alarm code and alarm name are indicated in 「Message」 . (The following picture is indicating the case alarm code 8 is detected.)



5.5 Parameters window

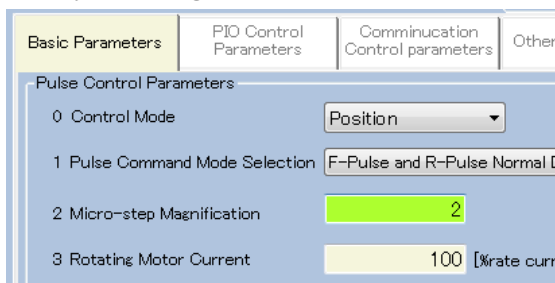
5.5.1 Change parameters

The procedure to change a parameter is shown below.

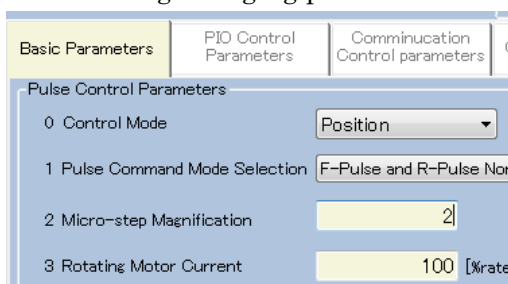
The descriptions below are the case to change parameter 「2 Micro-step Magnification」 for example.

Don't use 「Delete」 key while you change a value in a text box, and also don't enter a non-numeric data.

(1) If you changed to 「2」, the color of the frame will change to light green.



(2) If you press 「Enter」 key, the color of the frame goes back to original state. It is indicating changing parameter is finished successfully.



(3) If you press 「Esc」 key before 「Enter」 key, the color of the frame goes back to original state, and changing parameter is canceled.

5.5.3 「Trial Operation」 Step1

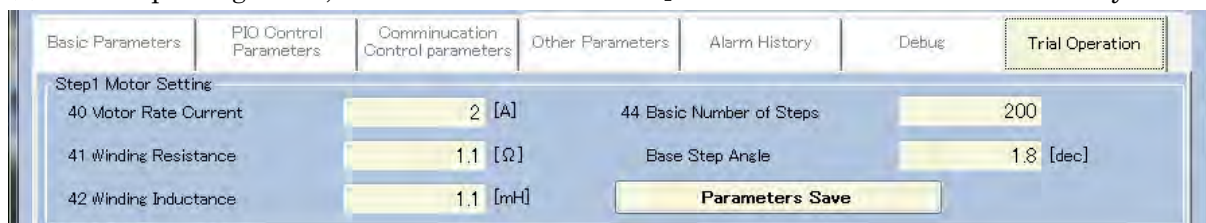
(1) Input value in following IDs. This is used for the Users manual Chapter 6.

「Motor rate current」	(ID#40)	: Motor rate current	[A]	※1
「Winding resistance」	(ID#41)	: Motor winding resistance	[Ω]	※1
「Winding inductance」	(ID#42)	: Motor winding inductance	[mH]	※1
「Basic number of steps」	(ID#44)	: 360 ÷ basic step angle		
(「Basic step angle」)		: Motor's original angle 1.8, 0.9 etc.	[dec]	

※1 In the software, following unit conversion is performed.

「Motor rate current」	: [0.01A]
「Winding resistance」	: [0.01Ω]
「Winding inductance」	: [0.01mH]

(2) After inputting value, click 「Parameters Save」 and save to non-volatile memory.



5.5.4 「Trial Operation」 Step2

(1) Operate motor in reference of the Users manual Chapter 6(4).

(2) Each button's function is as following.

「Speed control set」 : Rotate at the speed of 「Target Velocity」 in Speed and Position control mode.

「Position control set」 : Rotate the portion of 「Number of revolutions」 at Target velocity in Position control mode.

「finish」 : After stopping the motor according to the 「Deceleration」 , to 「Drive-OFF」 .

(3) Please click 「Parameters Save」 , after Trial Run is finished.

Step2 Trial Control Setting			
Target Velocity	100 [rpm]	Number of revolutions	1 [rev]
Speed control set		Position control set	
finish			
10 Minimum Speed	10 [rpm]	11 Speed Limit	3000 [rpm]
12 Acceleration	5000 [rpm/sec]	13 Deceleration	5000 [rpm/sec]
2 Micro-step Magnification	1	61 Travel Command	0 [rpm/sec]

6. Using AU9290 Meister detail settings

6.1. Introduction

AU9290 has various functions. Chapter 6 explains the detail settings for them. Basic manner to use AU9290Meister is referred at Chapter 5.

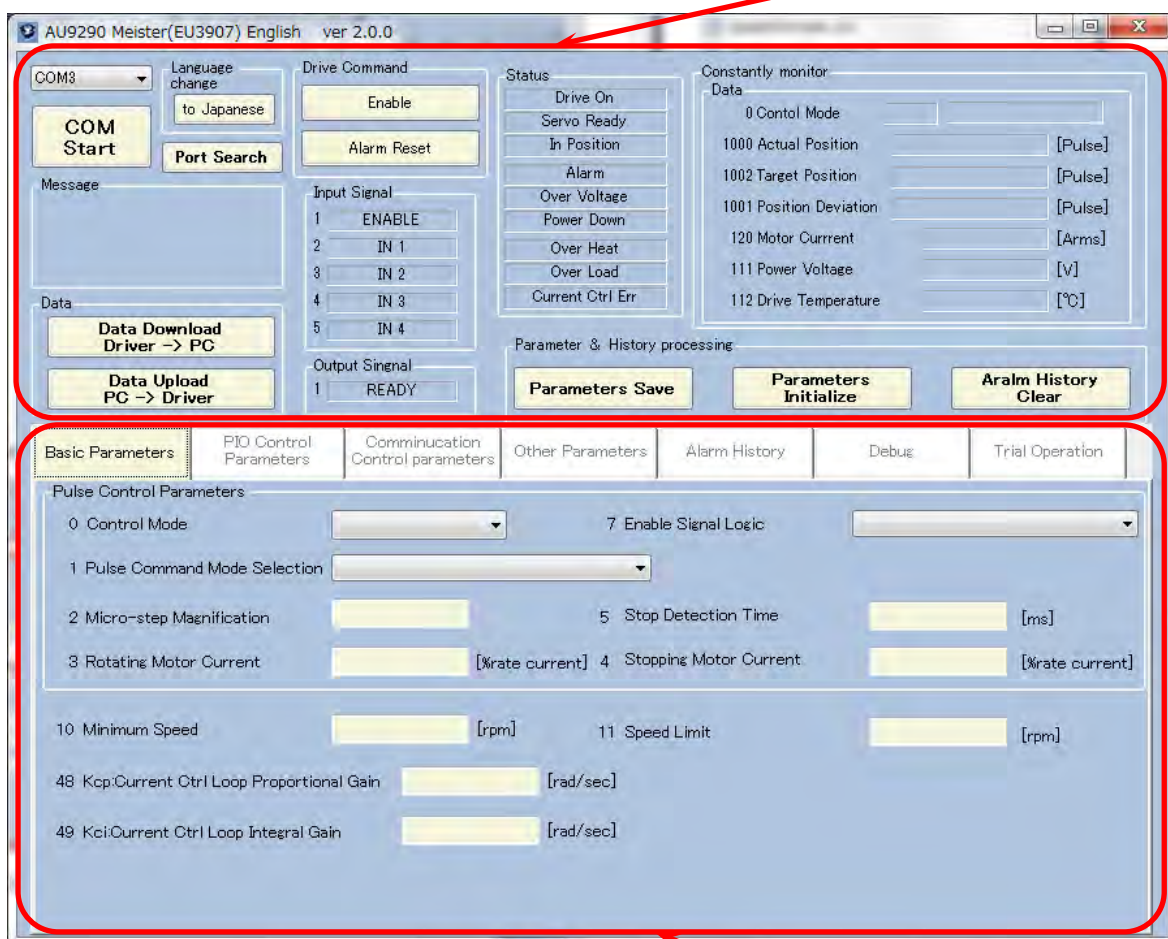
AU9290 has 3 operation modes: Pulse command operation mode, PIO operation mode, and Serial communication operation mode.

The operation modes that a following section is related to are written on the line of the title: For example, on 「6.2 Setting Display」 「Pulse」, 「PIO」 and 「Communication」 are written. This means that. the section 6.2 is related to 「Pulse mode」, 「PIO mode」 and 「Serial Communication mode」.

6.2. Setting Display : 「Pulse」, 「PIO」, 「Communication」

Following is setting display.

6.3. Status and Command



Structure in above setting display is as follow.

6.3 Status and command : For Driver status indication and command.

6.4 Parameters window : For settings parameters and confirm alarm history.

6.3. Status and Command

6.3.1 Display explanation : 「Pulse」 , 「PIO」 , 「Communication」

Current driver status is monitored. (In case of 「Alarm Code 8」 is generated)



Message : Alarm status etc. are indicated.

Data : Data input/output(Refer to Chapter 6.4.2.)

DriveCommand : Operation Enable and alarm reset

Input /Output Signal : I/O status is indicated. (Refer to Chapter 6.4.3.)

Status : Operation status is monitored.

Parameters&History processing

: Access to Non-volatile memory. (Refer to Chapter 6.4.4.)

Constantly monitor : Data is constantly monitored.

Data : Contents in the monitor.

6.3.2 「Data」 : 「Pulse」 , 「PIO」 , 「Communication」

6.3.2.1 Overview

Data input/output

「Data Download Driver -> PC」 : For downloading data in Driver to PC.

「Data Upload PC -> Driver」 : For uploading data in PC to Driver.

6.3.2.2 「Data Download Driver -> PC」

- (1) Click 「Data Download Driver -> PC」 .
- (2) Input folder name or file name. File extension is 「.tscs」 . Initial value is set as 「AU9290.tscs」 .
- (3) Click 「Save」 and data is saved.
- (4) Saved file contents are follows. This file can be found in the 「Notepad」 .

First line : Data save Date and Time.

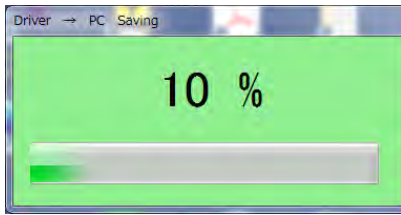
2nd line and after : 「ID」 , 「Data」 , 「ID description」

※ ID consists of 0 to130, 1000 to 1009 and 189.

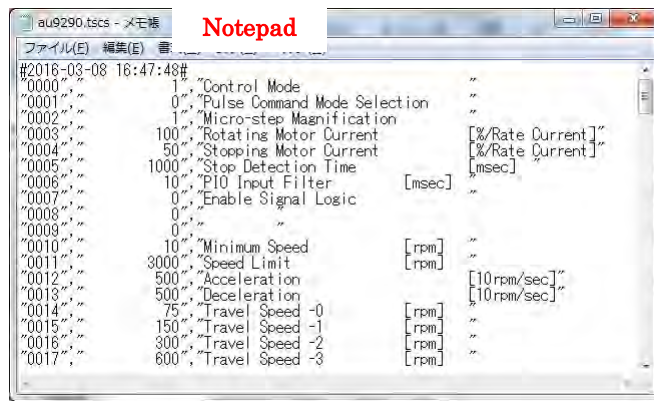


(1)Data Download

(2) Save file mane input



(3) Saving



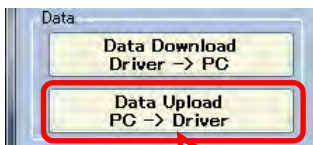
(4) Contents of saved file.

(You can see in the 「Notepad」)

6.3.2.3 「Data Upload」

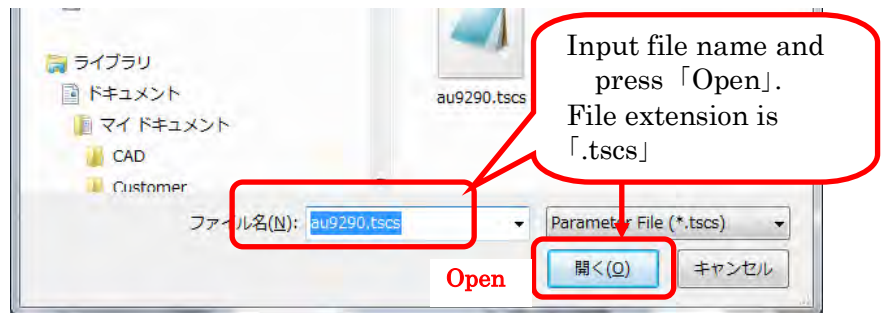
- (1) Click 「Data Upload」 .
- (2) Select folder name and file name for uploading. File extension is 「.tscs」 .
- (3) Click 「Open」 and start uploading.

※This operation cannot be saved data.

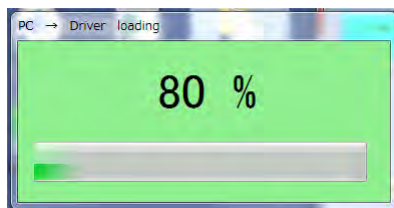


Click
「Data Upload
PC -> Driver」

(1)Data Upload」



(2) File selection for uploading



(3) Uploading

6.3.3 「Input Signal」 and 「Output Signal」 : 「PIO」, 「Pulse」 (Only Enable)

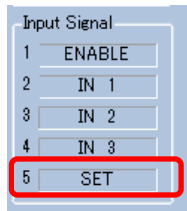
6.3.3.1 「Input Signal」

(1) I/O input signal is indicated. Indication is dependent of 「Control mode」 (ID#0).

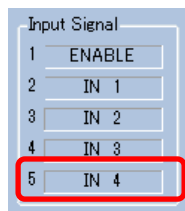
Control mode : In case of 「Position」, line 5 becomes 「SET」.

: In case of 「Speed」, line 5 becomes 「IN4」.

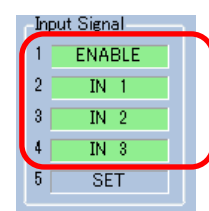
(2) When signal input into I/O, 「Input Signal」 turns on.



(1) In case of 「Position」



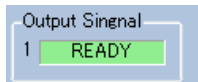
(1) In case of 「Speed」



(2) In case of 「I/O input」

6.3.3.2 「Output Signal」

I/O output signal 「READY」 is indicated. Please refer to Users manual Chart 8, as status is dependent of 「Control mode」.



「Output Signal」

6.3.4 「Parameters&History processing」 : 「Pulse」, 「PIO」, 「Communication」

Each button function

「Parameters Save」 : All parameter are saved in Non volatile memory.

「Parameters Initialize」 : Parameter is initialized ※1.

「Alarm History Clear」 : Alarm history is erased ※2.

Attention : **It may not be undone. Please operate the confirmation message on the check.**

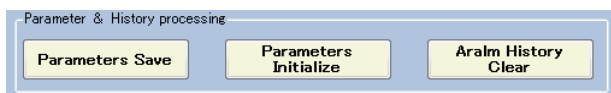
※1. Before 「Parameters Initialize」, it recommends backup by 「Data Download」.

After 「Parameters Initialize」, data is not saved. Please save by 「Parameters Save」.

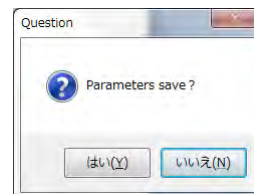
※2. Before 「Alarm History Clear」, it recommends backup by 「Data Download」.

After 「Alarm History Clear」, Automatically Alarm History is saved.

It cannot be undone.



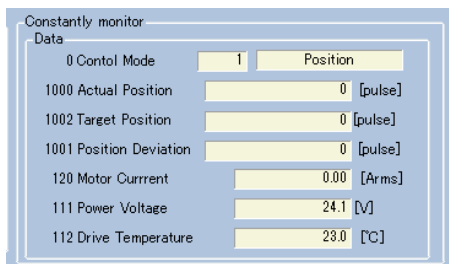
「Parameters&History processing」



Message for confirmation

6.3.5 「Constantly monitor」 : 「Pulse」, 「PIO」, 「Communication」

Driver's current status is indicated. Each value cannot be changed by hand.



「Constantly monitor」

6.4. Parameters window

6.4.1 Introduction



Following is contents of each menu bar. Detail is explained in each chapter later.

- 6.4.2 「Common Operation」 : How to change parameters.
- 6.4.3 「Basic Parameters」 : Motor operation settings by pulse. (6.5.3.1) and Basic parameter settings. (6.5.3.2)
- 6.4.4 「PIO Control Parameters」 : Motor operation settings by PIO.
- 6.4.5 「Communication Control Parameters」 : Motor operation settings by Communication.
- 6.4.6 「Other Parameters」 : Alarm and System parameter settings
- 6.4.7 「Alarm History」 : Indication of Alarm history
- 6.4.8 「Debug」 : Debug
- 6.4.9 「Trial Operation」 : Motor operation setting and Trial run

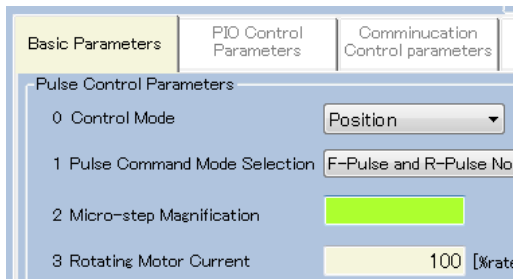
6.4.2 「Common Operation」

6.4.2.1 Delete previous parameter

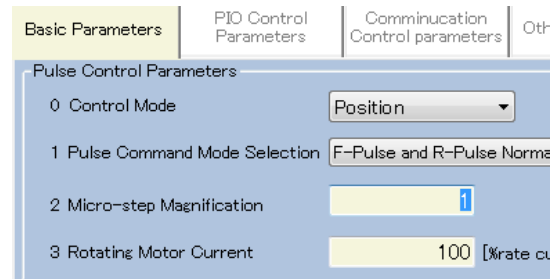
For example if you want delete previous parameter 「2 Micro-step Magnification」 ,there are 2 ways to change parameter. **Don't use 「Delete」 key.**

- ① Using 「Back space」 Key
- ② Dragging the previous parameter.

The case of the method ①, the color of the frame of the change parameter will change.



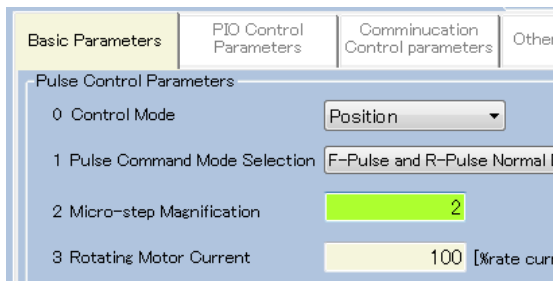
① Using 「Back space」 Key



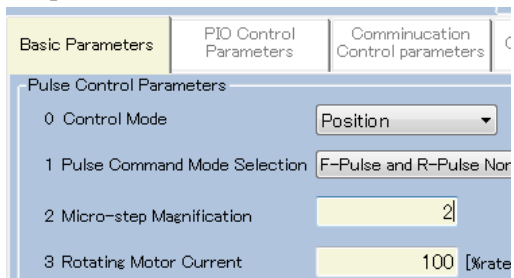
② Dragging the previous parameter

6.5.2.2 Input new parameters

If you press 「2」 key, the color of the frame will change.



If you press 「Enter」 key, the color of the frame goes back to original state, and the value is updated.



6.5.2.3 Cancel

If you press 「Esc」 key, the value is not updated and the color of the frame goes back to original state.

6.5.2.4 Invalid Data

If you enter non-numeric data and press 「Enter」 key, an error message is displayed , will be canceled to change parameter.

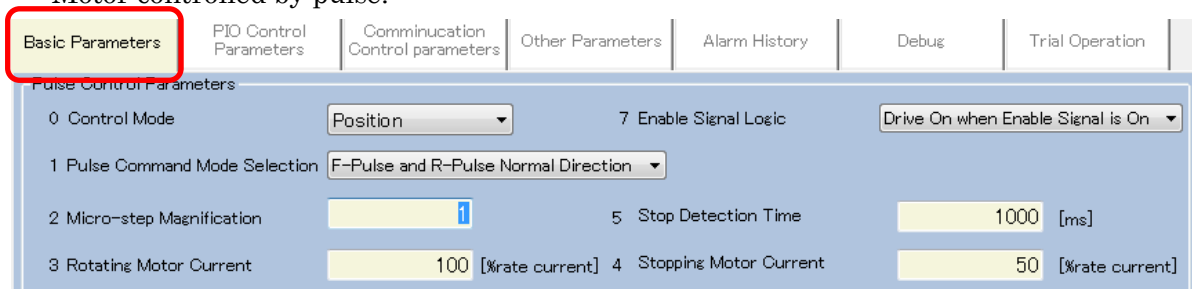


「Error message」

6.5.3 「Basic Parameters」

6.5.3.1 「Pulse Control Parameters」 : 「Pulse」

Motor controlled by pulse.

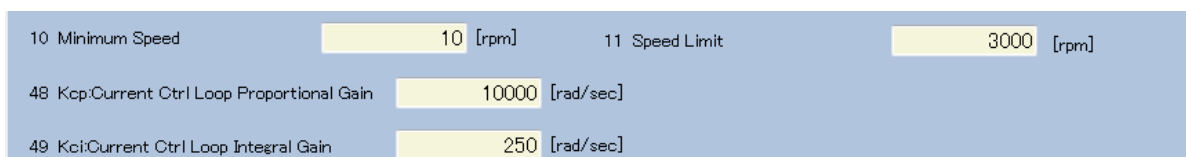


- 「Control mode」 (ID#0) : Set 「Position」 .
- 「Enable signal logic」 (ID#7) : Drive on when Enable signal is on (Default).
- 「Pulse command mode selection」 (ID#1) : Select the kind of pulse command.
- 「Micro-step Magnification」 (ID#2) : This value determines the resolution of Position data including Pulse Command. (Refer Users manual Chap.7)
- 「Stop Detection Time」 (ID#5) : Time until Stop Status can be detected. [msec]
- 「Rotating Motor Current」 (ID#3) : Motor current during rotation. [%/Rate current]
- 「Stopping Motor Current」 (ID#4) : Motor current during stopping. [%/Rate current]

6.5.3.2 「Basic Parameters」 : 「Pulse」 , 「PIO」 , 「Communication」

Basic parameter is set in case of motor control by PIO (Parallel I/O)

Gain value change gives inference on motor moving. Generally, it is not necessary to change, and please change the value gradually, based on the application and according to the motor movement condition.



- 「Minimum Travel Speed」 (ID#10) : Minimum speed at Acceleration and Deceleration.[rpm]
- 「Speed Limit」 (ID#11) : Set Max speed. [rpm]
- 「Kpi」 (ID#48) : Current control loop proportional gain [rad/sec]
- 「Kci」 (ID#49) : Current control loop integral gain [rad/sec]

6.5.4 「PIO Control Parameters」 : 「PIO」

Motor operation is set by PIO (Parallel I/O). (Display Indication is different in each control mode.) Please refer Detail setting to Users manual Chapter 8.

In case of 「Position」 control mode.

ID	Parameter Name	Value	Unit
0	Control Mode	Position	
2	Micro-step Magnification	1	
6	PIO Input Filter	10	[ms]
10	Minimum Speed	10	[rpm]
12	Acceleration	5000	[rpm/sec]
13	Deceleration	5000	[rpm/sec]
14	Travel Speed -0	75	[rpm]
15	Travel Speed -1	150	[rpm]
16	Travel Speed -2	300	[rpm]
17	Travel Speed -3	600	[rpm]
7	Enable Signal Logic	Drive On when Enable Signal is On	
20	Travel Command -0	200	[Pulse]
21	Travel Command -1	400	[Pulse]
22	Travel Command -2	800	[Pulse]
23	Travel Command -3	2000	[Pulse]
24	Travel Command -4	-200	[Pulse]
25	Travel Command -5	-400	[Pulse]
26	Travel Command -6	-800	[Pulse]
27	Travel Command -7	-2000	[Pulse]
28	Travel Magnification	1	

In case of 「Speed」 control mode.

ID	Parameter Name	Value	Unit
0	Control Mode	Velocity	
2	Micro-step Magnification	1	
6	PIO Input Filter	10	[ms]
10	Minimum Speed	10	[rpm]
12	Acceleration	5000	[rpm/sec]
13	Deceleration	5000	[rpm/sec]
14	Travel Speed -0	75	[rpm]
15	Travel Speed -1	150	[rpm]
16	Travel Speed -2	300	[rpm]
17	Travel Speed -3	600	[rpm]

「Control mode」 (ID#0) : Select 「Position」 or 「Speed」 .

「Enable signal logic」 (ID#7) : Drive on when Enable signal is on (Default).

「Micro-step magnification」 (ID#2) : This value determines the resolution of Position data including Pulse Command.

(Refer to Users manual Chap.7)

「PIO input filter」 (ID#6) : Set time of PIO input filter. [msec]

「Minimum speed」 (ID#10) : Set minimum speed at Acc./Dec. on P-to-P. [rpm]

「Acceleration」 (ID#12) : Set acceleration on P-to-P operation. [rpm/sec] ※

「Deceleration」 (ID#13) : Set deceleration on P-to-P operation. [rpm/sec] ※

「Travel speed」 -0~3 (ID#14~17) : Travel speed set by PIO [rpm]

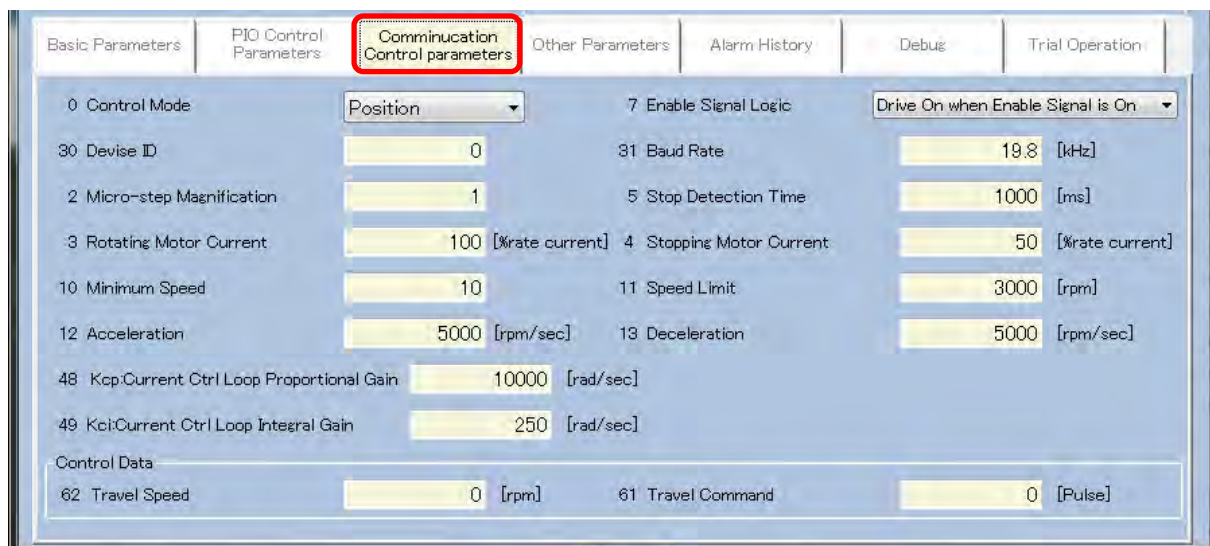
「Travel command」 -0~7 (ID#20~27) : Travel distance set by PIO. [Pulse]

「Travel magnification」 (ID#28) : Magnification of Travel distance

※ Value unit of Acceleration and Deceleration is converted to [10rpm/sec] in software.

6.5.5 「Communication Control Parameters」 : 「Communication」

Motor operation is set by Serial communication. Display Indication is different in each control mode. (In case of 「Speed」 command, 「61 Travel command」 is not indicated)



「Control mode」	(ID#0)	: Select 「Position」 or 「Speed」 .
「Enable signal logic」	(ID#7)	: Drive on when Enable signal is on (Default).
「Device ID」	(ID#30)	: Device ID for serial communication. : 1~15 selection
「Baud rate」	(ID#31)	: Baud rate of serial communication [kHz]※1
「Micro-step magnification」	(ID#2)	: This value determines the resolution of Position data including Pulse Command. (Refer to Users manual Chap.7)
「Stop detection time」	(ID#5)	: Time until stop status is detected. [msec]
「Rotating motor current」	(ID#3)	: Motor current during rotation. [%/Rate current]
「Stopping motor current」	(ID#4)	: Motor current during stopping. [%/Rate current]
「Minimum speed」	(ID#10)	: Set minimum speed at Acc./Dec. on P-to-P. [rpm]
「Speed limit」	(ID#11)	: Set Max. speed. [rpm]
「Acceleration」	(ID#12)	: Set acceleration on P-to-P operation. [rpm/sec] ※2
「Deceleration」	(ID#13)	: Set deceleration on P-to-P operation. [rpm/sec] ※2
「Kpi」	(ID#48)	: Current control loop proportional gain [rad/sec]
「Kci」	(ID#49)	: Current control loop integral gain [rad/sec]

※1 Value unit of 「Baud Rate」 is converted to [0.1kHz] in software.

※2 Value unit of 「Acceleration」 and 「Deceleration」 is converted to [10rpm/sec] in software.

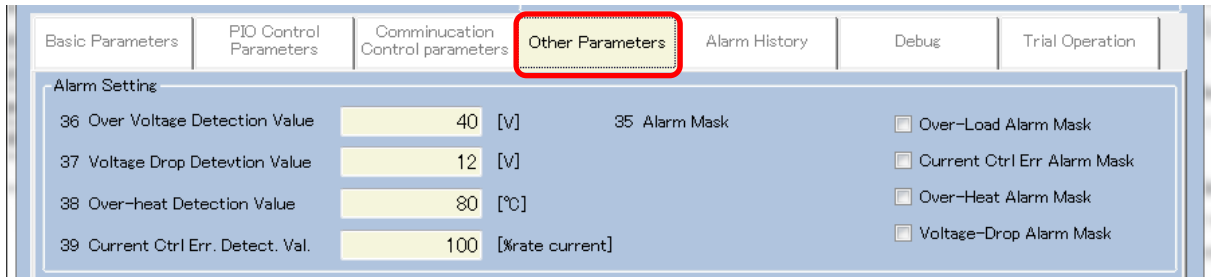
Following is control data

「Travel speed」	(ID#62)	: Set target speed [rpm]
「Travel command」	(ID#61)	: Set travel distance at P-to-P operation. [Pulse]

6.5.6 「Other Parameters」 : 「Pulse」 , 「PIO」 , 「Communication」

6.5.6.1 「Alarm Setting」

Change alarm settings.



- 「Over-voltage detection value」 (ID#36) : 「6」 Over-voltage alarm voltage setting. [V] ※1
 「Voltage drop detection value」 (ID#37) : 「7」 Voltage drop alarm voltage setting. [V] ※1
 「Over-heat detection value」 (ID#38) : 「5」 Over-heart alarm temperature setting [°C]※1
 「Current control error detection value」 (ID#39)
 : 「3」 current control error alarm setting [%/Rate current]
 「Alarm mask」 (ID#35) : Each alarm is masked and ignored. ※2

※1 Units of following value are automatically converted in software.

「Over voltage detection value」 and 「Voltage reduction detection value」 : [0.1V]

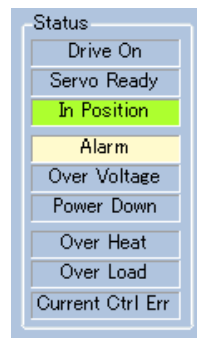
「Over heat detection value」 : [0.1°C]

※2 Following is the function of Alarm mask.

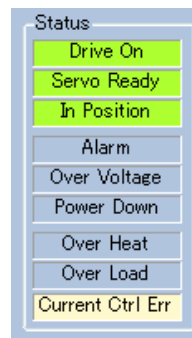
i.e. : Mask 「Current control error」

No Mask : At alarm, 「Alarm」 the light turns on in Status, and turn off 「Drive On」. (Due to 「Drive Off」, the light of 「Current Ctrl Err」 is turned off.

Mask : At alarm, without turning on 「Alarm」 light, the light of 「Drive On」 remaining turned on, 」, and motor can drive.
 (「Current Ctrl Err」 is turned on.)



Without alarm Mask

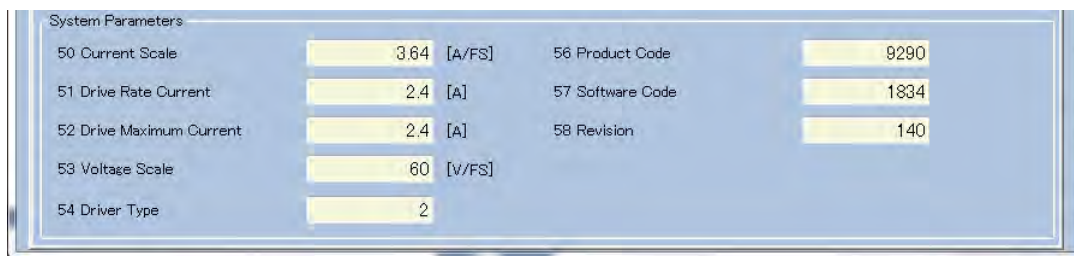


Alarm Mask

6.5.6.2 「System Parameters」

System parameter set in Driver is indicated.

Each parameter can't be changed. (This parameter is fixed in the Driver. Even if each value is changed in the software, these values are not updated in Driver.)



- 「Current detection scale」 (ID#50) [A/FS]※1
- 「Driver rate current」 (ID#51) [A]※1
- 「Driver maximum current」 (ID#52) [A]※1
- 「Voltage detection scale」 (ID#53) [V/FS]※1
- 「Driver type」 (ID#54)
- 「Product Code」 (ID#56)
- 「Software Code」 (ID#57)
- 「Revision」 (ID#58)

※1 Units of following value are automatically converted in software.

- 「Current detection scale」 : [0.01A/FS]
- 「Driver rata current」 and 「Driver maximum current」 : [0.01A]
- 「Voltage detection scale」 : [0.1V/FS]

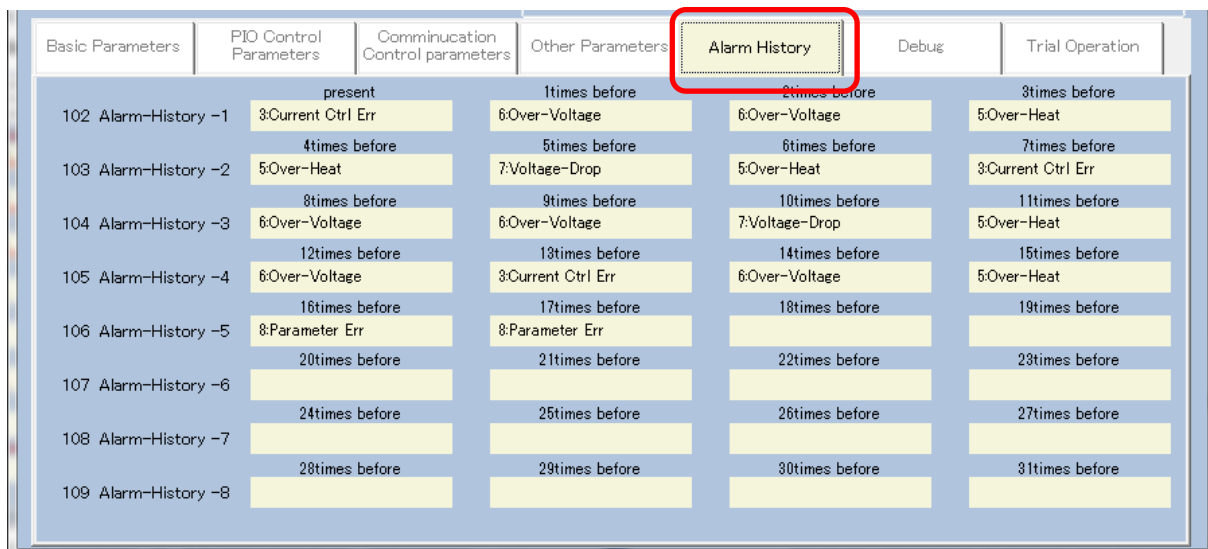
6.5.7 「Alarm History」 : 「Pulse」 , 「PIO」 , 「Communication」

Alarm history is indicated.

- Indication change is only at 「Alarm History Clear」 ※1

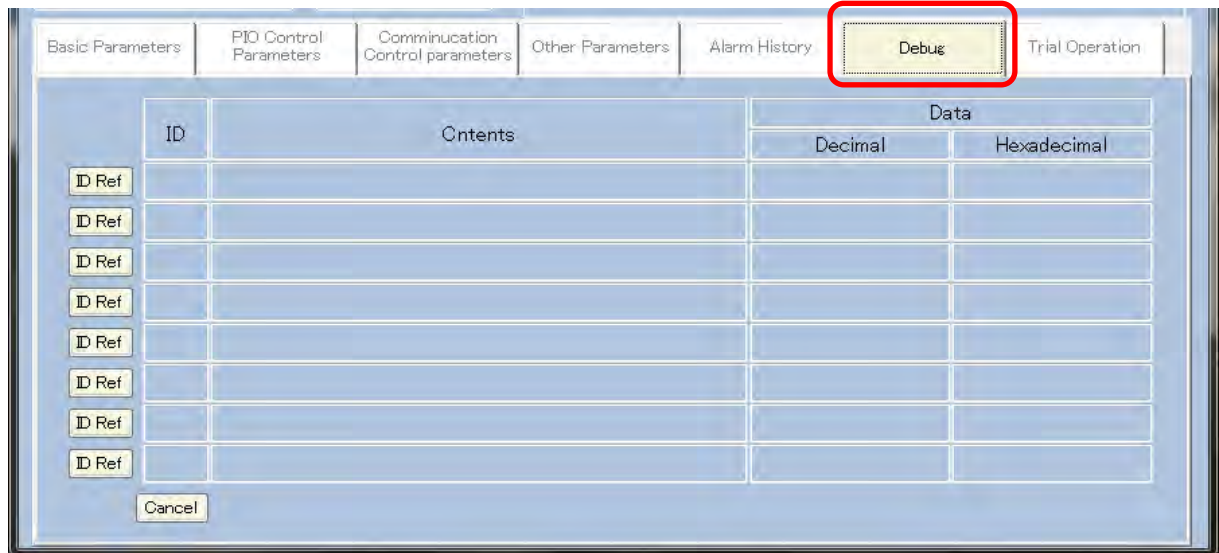
※1 We recommend making back-up file by 「Data Download」 before erasing Alarm History 「Alarm History Clear」

After Alarm History clear, new alarm history is updated. Even if Power is off and on, this history isn't undone.



Data is confirmed with Debug.

When each ID is selected, the ID content is indicated.



Operation procedure is as follows.

6.5.8.1 ID input

There are 2 ways to input.

- ① Click 「ID Ref」
- ② Input 「ID」

6.5.8.2 Change data

6.5.8.3 Cancel and delete

6.5.8.1 ID input

- ① In case of 「ID Ref」 click.

When 「ID Ref」 is clicked, following window comes up.

Please click ID or content you want to confirm.

ID	Content	ID	Content	ID	Content
0	Control Mode	25	Travel Command -5[pulse]	50	Current Scale [0.01A/FS]
1	Pulse Command Mode Selection	26	Travel Command -6[pulse]	51	Drive Rate Current [0.01A]
2	Micro-step Magnification	27	Travel Command -7[pulse]	52	Drive Maximum Current [0.01A]
3	Rotating Motor Current[%/Rate Current]	28	Travel Magnification	53	Voltage Scale[0.1V/FS]
4	Stopping Motor Current[%/Rate Current]	29		54	Driver Type
5	Stop Detection Time[msec]	30	Devise ID	55	
6	PIO Input Filter[msec]	31	Baud Rate[0.1kHz]	56	Product Code
7	Enable Signal Logic	32	Communication Software	57	Software Code
8		33		58	Revision
9		34		59	
10	Minimum Speed[rpm]	35	Alarm Mask	60	Drive Command
11	Speed Limit[rpm]	36	Over Voltage Detection Value[0.1V]	61	Travel Command[Pulse]
12	Acceleration [10rpm/sec]	37	Voltage Drop Detevtion Value[0.1V]	62	Travel Speed[rpm]
13	Deceleration [10rpm/sec]	38	Over-heat Detection Value[0.1°C]	63	Voltage Command [0.1V]
14	Travel Speed -0[rpm]	39	Current Ctrl Err. Detect. Val[%/Rate Current]	64	
15	Travel Speed -1[rpm]	40	Motor Rate Current[0.01A]	65	
16	Travel Speed -2[rpm]	41	Winding Resistance[0.01Ω]	66	
17	Travel Speed -3[rpm]	42	Winding Inductance[0.01mH]	67	
18		43	Motor Inertia	68	
19		44	Basic Number of Steps	69	
20	Travel Command -0[pulse]	45	Motor Type	70	Parameters-Init
21	Travel Command -1[pulse]	46		71	Parameters-Save
22	Travel Command -2[pulse]	47		72	History-Save
23	Travel Command -3[pulse]	48	KcpCurrent Ctrl Loop Proportional Gain	73	Parameters-Read
24	Travel Command -4[pulse]	49	KciCurrent Ctrl Loop Integral Gain	74	History-Read

(i.e.) In case 「40」 or 「Motor rate current」 is clicked.(Any line is applicable)

ID Ref	ID	Contents	Data	
			Decimal	Hexadecimal
ID Ref				
ID Ref				
ID Ref	40	Motor Rate Current [0.01 A]	200	00C8
ID Ref				
ID Ref				

Color of the line is change and data is indicated.

① In case 「ID」 is input.

On inputting 「ID」 , the color of the line is changed.(Any line is applicable)

ID Ref	ID	Contents	Data	
			Decimal	Hexadecimal
ID Ref	1			
ID Ref				

② After inputting 「ID」 , press 「Enter」 , and data is indicated.

ID Ref	ID	Contents	Data	
			Decimal	Hexadecimal
ID Ref	12	Acceleration [10rpm/sec]	500	01F4
ID Ref				

6.5.8.2 Change parameter

Parameter is changed by Decimal or Hexadecimal.

Attention : **Pay attention to unit of value. Data is indicated as data in Driver.**

In below case, Acceleration is 5000 [rpm/sec] (500[10rpm/sec])

ID Ref	ID	Contents	Data	
			Decimal	Hexadecimal
ID Ref	12	Acceleration [10rpm/sec]	500	01F4
ID Ref				

① For value delete, delete by 「BackSpace」 . **Don't use 「Delete」 key.**

(Dragging the previous parameter is applicable. Refer to Chapter 6.5.2)

ID Ref	ID	Contents	Data	
			Decimal	Hexadecimal
ID Ref	12	Acceleration [10rpm/sec]	00	01F4
ID Ref				

② After changing data, please press 「Enter」 . The color of the frame goes back to original state, and the value is updated.

ID Ref	ID	Contents	Data	
			Decimal	Hexadecimal
ID Ref	12	Acceleration [10rpm/sec]	200	00C8
ID Ref				

Note: Even if system parameter ID is changed,

ID Ref	ID	Contents	Data	
			Decimal	Hexadecimal
ID Ref	56	Product Code	9000	244A
ID Ref				

The value is not updated and the color of the frame goes back to original state.

ID Ref	ID	Contents	Data	
			Decimal	Hexadecimal
ID Ref	56	Product Code	290	244A
ID Ref				

6.5.8.3 Cancel and Delete.

① Please press 「Cancel」 on the left bottom for input cancellation.

ID Ref	ID	Contents	Data	
			Decimal	Hexadecimal
ID Ref	12	Acceleration [10rpm/sec]	00	01F4
ID Ref				

② The change parameter is canceled and the color of the frame goes back to original state.

ID Ref	ID	Contents	Data	
			Decimal	Hexadecimal
ID Ref	12	Acceleration [10rpm/sec]	200	00C8
ID Ref				

③ Cancellation of ID. Please press 「Cancel」 .

ID Ref	ID	Contents	Data	
			Decimal	Hexadecimal
ID Ref	1	Acceleration [10rpm/sec]	200	00C8
ID Ref				

④ The change ID is canceled and the color of the frame goes back to original state.

ID Ref	ID	Contents	Data	
			Decimal	Hexadecimal
ID Ref	12	Acceleration [10rpm/sec]	200	00C8
ID Ref				

To delete the line, please press 「Back Space」 at ID.

ID Ref	ID	Contents	Data	
			Decimal	Hexadecimal
ID Ref	1	Acceleration [10rpm/sec]	200	00C8
ID Ref				

The color of the frame goes back to initial state.

ID Ref	ID	Contents	Data	
			Decimal	Hexadecimal
ID Ref				
ID Ref				

Indicated content is kept until program is finished.

6.5.9 「Trial Operation」 : 「Pulse」 , 「PIO」 , 「Communication」

6.5.9.1 「Trial Operation」 Step1

Motor operation setting and Trial run.

(1) Input value in following IDs. This is used for the Users manual Chapter 6.

「Motor rate current」	(ID#40)	: Motor rate current	[A]	※1
「Winding resistance」	(ID#41)	: Motor winding resistance	[Ω]	※1
「Winding inductance」	(ID#42)	: Motor winding inductance	[mH]	※1
「Basic number of steps」	(ID#44)	: 360 ÷ basic step angle		
(「Basic step angle」)		: Motor's original angle 1.8, 0.9 etc.	[dec]	

※1 In the software, following unit conversion is performed.

「Motor rate current」	: [0.01A]	「Winding resistance」	: [0.01Ω]
「Winding inductance」	: [0.01mH]		

(2) After inputting value, press 「Parameters Save」 and save to non-volatile memory.

6.5.9.2 「Trial Operation」 Step2

(1) Operate motor in reference of the User's manual Chapter 6(4).

(2) Each button's function is as following.

「Speed control set」	: Rotate at the speed of 「Target Velocity」 in Speed and Position control mode.
「Position control set」	: Rotate the portion of 「Number of revolutions」 at Target velocity in Position control mode.
「finish」	: After stopping the motor according to the 「Deceleration」 , to Drive-OFF.

(3) Please press 「Parameters Save」 , after Trial Run is finished.

「Minimum speed」	(ID#10)	: Set minimum speed at Acc./Dec. on P-to-P.	[rpm]
「Speed limit」	(ID#11)	: Set Max. speed.	[rpm]
「Acceleration」	(ID#12)	: Set acceleration on P-to-P operation.	[rpm/sec] ※
「Deceleration」	(ID#13)	: Set deceleration on P-to-P operation.	[rpm/sec] ※
「Micro-step magnification」	(ID#2)	: This value determines the resolution of Position data including Pulse Command.	
		(Refer to Users manual Chap.7)	
「Travel command」	(ID#61)	: Set travel distance at P-to-P operation.	[Pulse]

※ Value unit of Acceleration and Deceleration is converted to [10rpm/sec] in software.

7. Trouble shooting

Please refer in case Driver can't operate correctly.

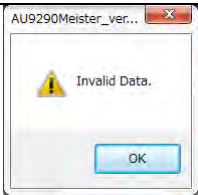
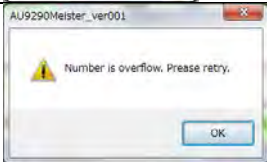
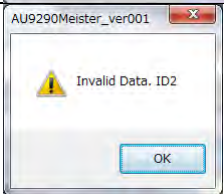
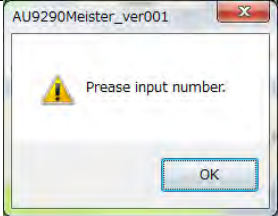
Firstly, in case of trouble, Please confirm Power input and cable connection.

Other trouble is listed as below.

7.1. Trouble shooting related to USB port.

Chap.	Trouble	Cause	Treatment
3.1	No software for PC.	—	Contact our sales department
3.2	Device driver can't be installed.	① Does the USB port set for other function specifically like Virtual port?	① Please install with another USB port.
3.2	Device manager doesn't indicate the port.	① USB Driver software set at chapter 3.1 has installed correctly?	① Please install the USB Driver software.

7.2. Trouble shooting related to AU9290 Meister

Chap.	Trouble	Cause	Treatment
4.2(1)	Error is generated.	① Software bug...	① Please contact sales department.
4.2(2)	No initial display.	① Display is hidden.	① Please click Icon Blinking on Task Bar.
4.2(2)	Not be able to read the display of the lower half.	① Do not display the Japanese mode?	① Please change language 「to English」 refer to Chap. 4.3
5.3 6.3	No COM port confirmed chapter 3.3.	① No power input. ② No USB connection.	① Please turn on power for Driver. ② Please connect USB, Press 「Port Search」 and reconfirm the connection.
5. 6.		① Do not enter a non-numeric data? ② When performing 「Data Upload」, is it not wrong data in upload file?	① Other characters than number is input in ID? ② Confirm the file to Upload.
5. 6.		① Input number is larger or smaller against applicable value range?	① Valid value is 32bit in ID 1000 and above. (within ±2,147,483,647) Other ID is 16bit. (within ±32767)
5. 6.		① Negative number is input in ID and the parameter saved?	① Correct value in the ID No. indicated as error. (Indicated in message window), and press 「Parameters Save」 again. If alarm comes up again, repeat to input correct values until error disappear.
6.5.7.1		① Do not enter a non-numeric in ID?	① Only number is acceptable in ID.

Above trouble shooting is not covering perfectly. Please free to contact our sales department if you have any question and problem.

Revision history

Date	Revised content	Note
2016.04.20	First edition	Rev.0000
2016.04.26	Add description of total number of pages.	Rev.0001