

Manual for PC Communication Program

Manual Version : [ver2.6]

First edition : Nov 01., 2002

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Hellow?

Thanks for using Mecapion products.

This manual describe how to use PC Communication and attentions. Any mistake will make wrong operations in communication so, please take correct steps after reading this manual.

Attention

◆ Normal Attention



- This Manual can be changed according to software. In this case . new manual version will be published
- PC communication Software will be used just for Mecapion servo drive. Before using, please check Software version.
- Use the correct PC communication program for servo drive(VS or VP)

◆ Operation Attention



- Close PC communication program after Servo-OFF.
- Don't operate I/O of CN1 connector while operating servo system. It will make wrong operation.
- In case of download with different version of parameter, it may be happen system problem.
- Don't change communication setting while making communicstion. It will make communication error.
- Don't connect RS232 cable to other servo drive. Communication error or system problem can be happen. If you connect to different drive, check version then make upload again.

PC Communication

(Version : 2.6)

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1. Index

This program can be used for check servo status, edit parameter data, various operation etc..

2. Setting

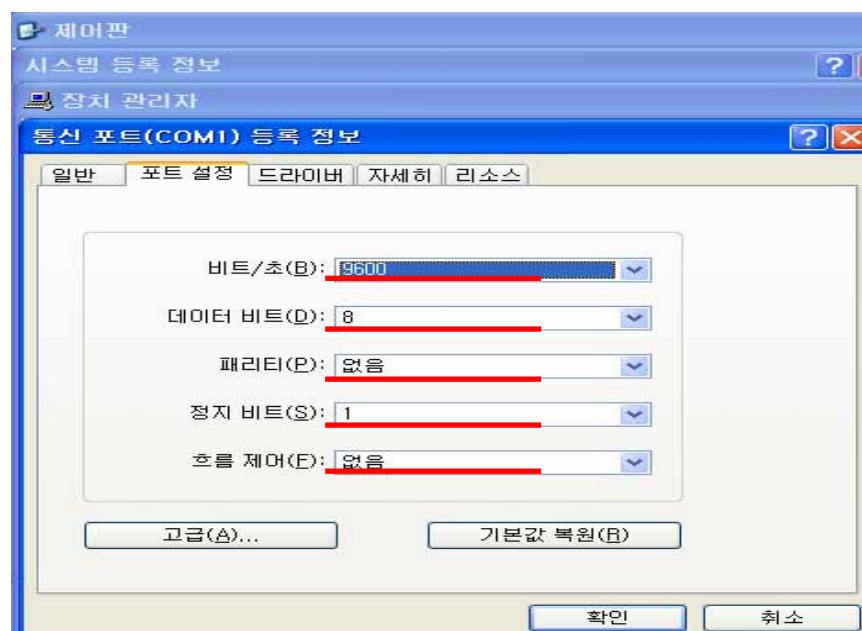
♣ Essential Condition before operating.

- (1) Windows98 : “Mfc42d.dll, Mfc042d.dll, Msvcrt.dll” in System folder
WindowsXP,2000 : “Mfc42d.dll, Mfc042d.dll, Msvcrt.dll” in System32 folder
=> Copy

- (2) Click “Mecapion.exe”

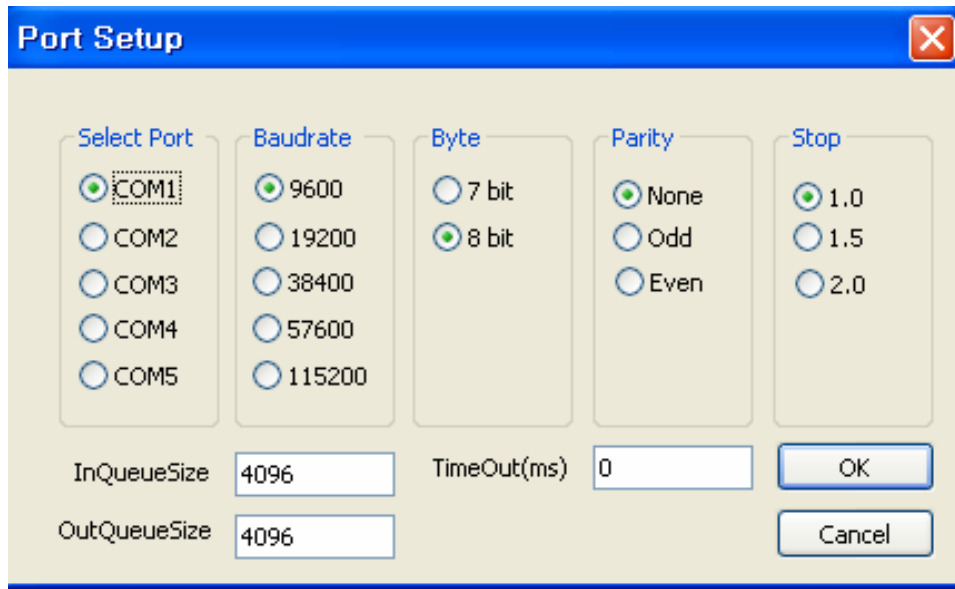
- (3) Communication port -> Port setting

(Initial status. If there is communication error, please check the under mentioned setting status .)



(4) Setting PC communication program

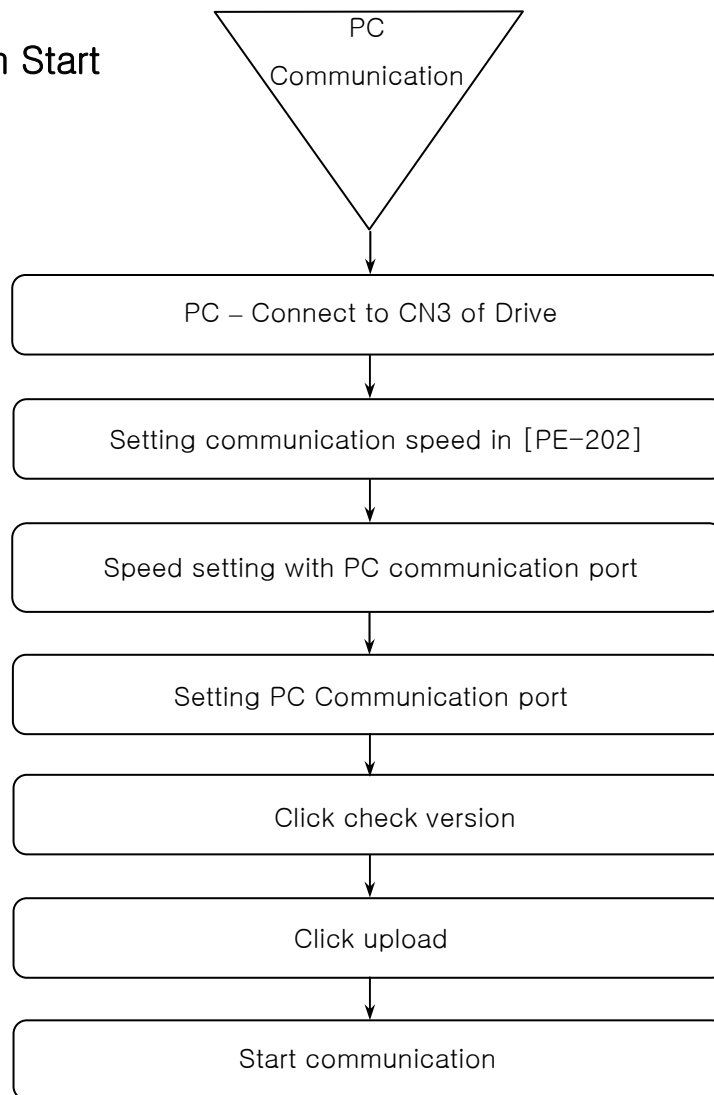
(System → Click System Setup)



The under mentioned are initial setting.

- ① Port : Make the same with PC port no and Servo[PE-207].
(0 : COM1, 1:COM2, 2:COM3, 4:COM4, 5:COM5)
- ② BaudRate : Make the same with Servo[PE-202].
(0 : 9600, 1 : 19200, 2:38400, 3: 57600 (Unit: bps))
- ③ Byte : 8byte.
- ④ Parity : None.
- ⑤ Stop : 1
- ⑥ InQueueSize & OutQueueSize : 4096

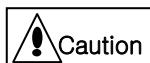
3. Program Start



◆ You can check communication is operated or not with DC voltage.

It will be changed minutely. If the value is not changed, it means stop of communication. So, start communication again.

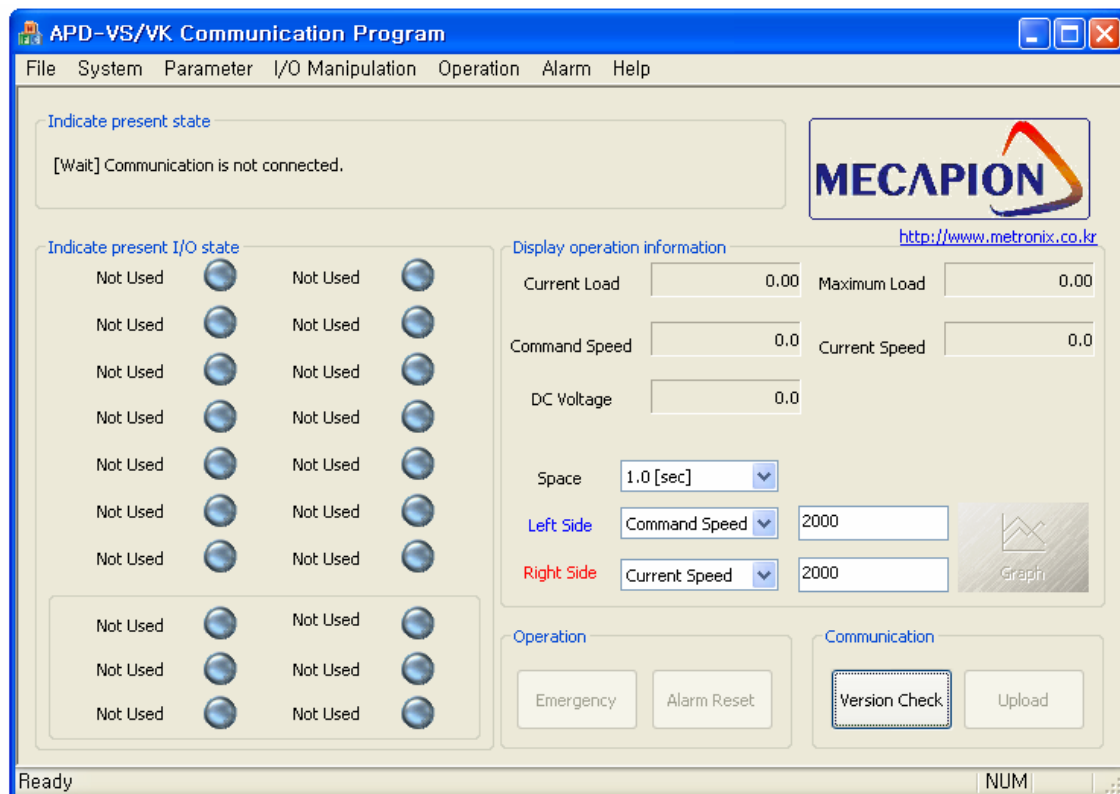
(In case of edit parameter, turning operation, I/O operation, moving to Alarm, no change can be happen .)



1. Don't operate I/O of CN1 connector while operating servo system. It will make wrong operation.
2. Close PC communication program after Servo-OFF.
3. Don't change communication setting while making communication. It will make communication error.

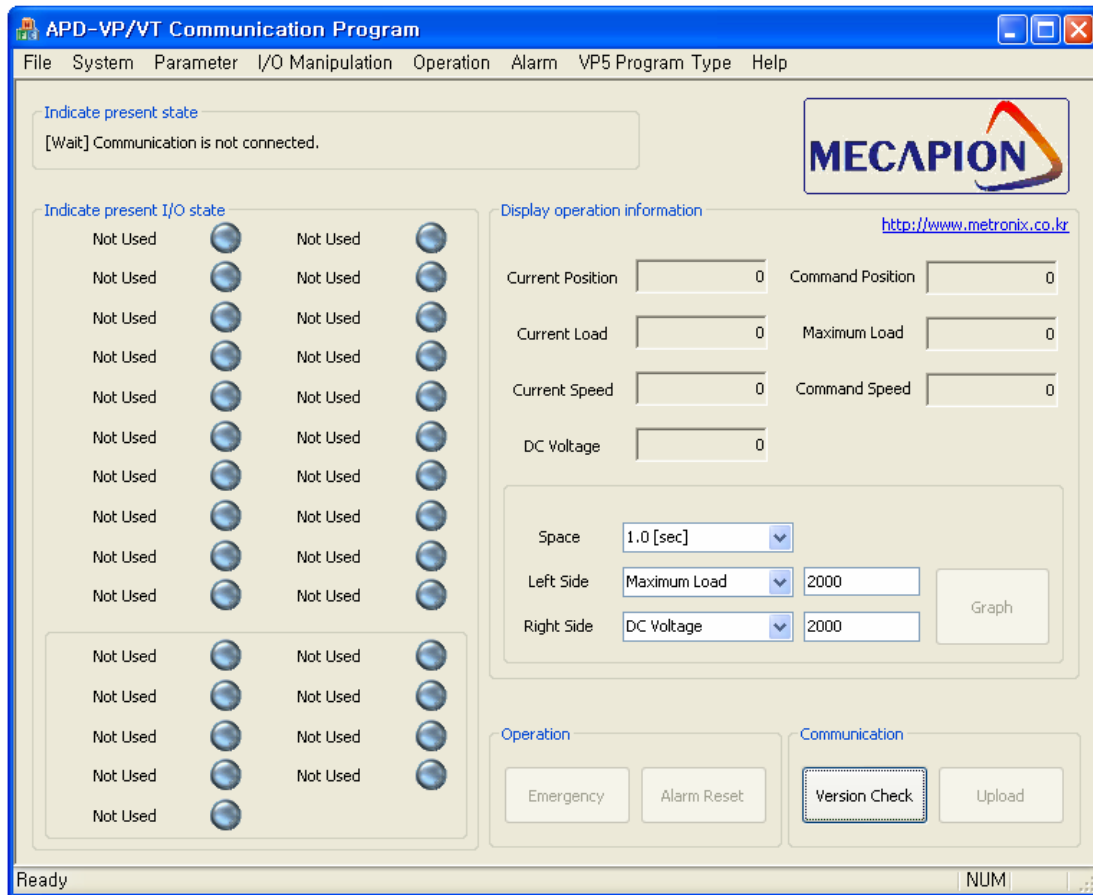
4. Manual

4.1 VS Manual



Article	Description				
File	Print	Print Preview	Exit		
System	System Sepup				
Parameter	Parameter Edit				
I/O Manipulation	I/O Temporary Manipulation	I/O Permanent Manipulation			
Operation	Speed Operation	Tuning Operation	Menu Initialization	Compensate Curent Offset	Indicate Present State
Alarm	Alarm History				
Help	Help	Mecapion Comm...			

4.2 VP Manual



Article	Description				
File	Print	Print Preview	Exit		
System	System Sepup				
Parameter	Parameter Edit				
I/O Manipulation	I/OTemporary Manipulation	I/O Permanent Manipulation			
Operation	Speed Operation	Tuning Operation	Menu Initialization	Compensate Curent Offset	Indicate Present State
Alarm	Alarm History				
VP5 Program	VP5				

Type	Parameter Edit				
Help	Help	Mecapion Comm...			

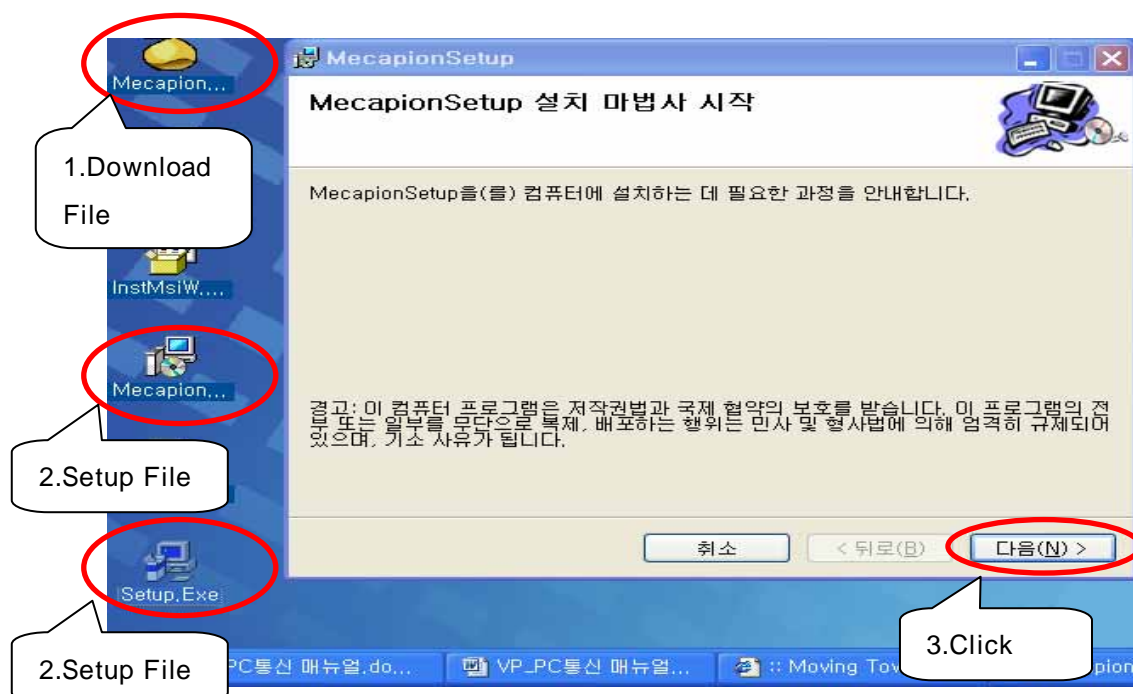
5. Operation

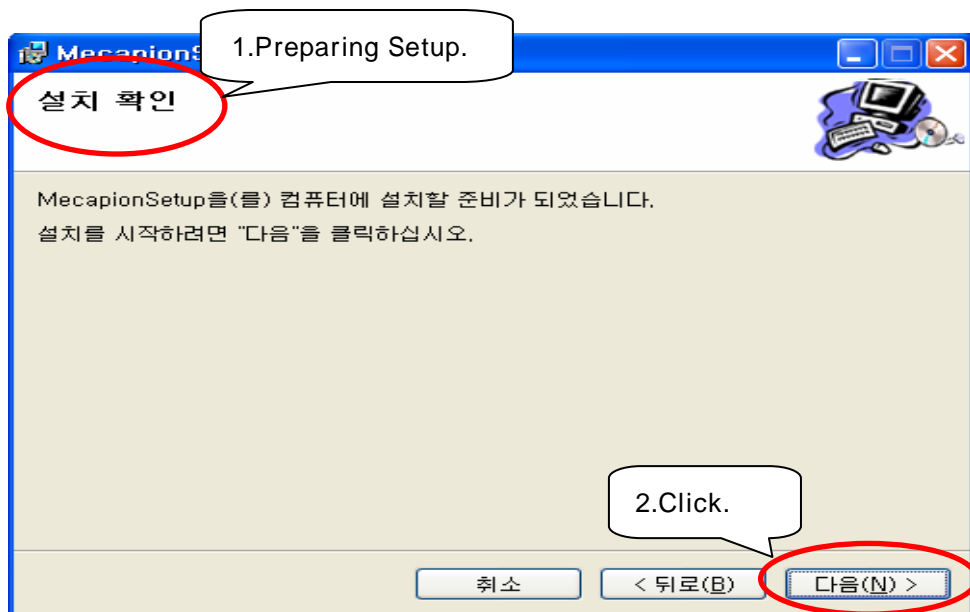
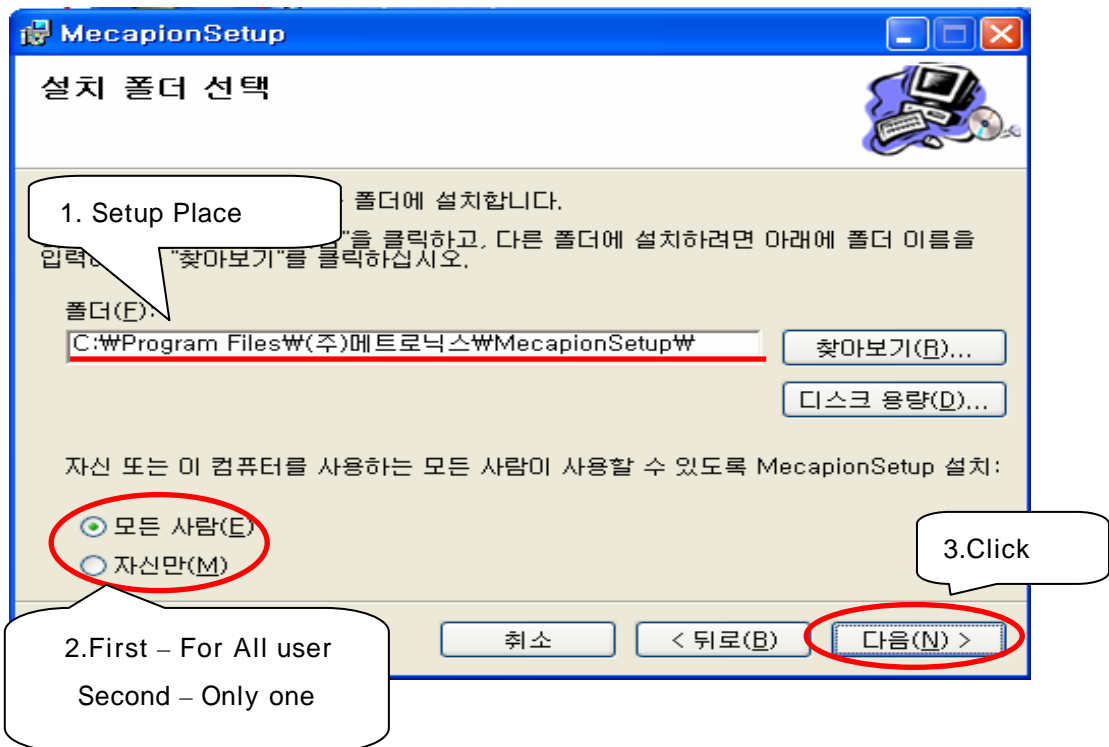
5.1 Setup

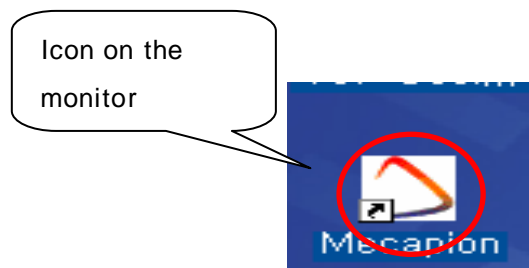
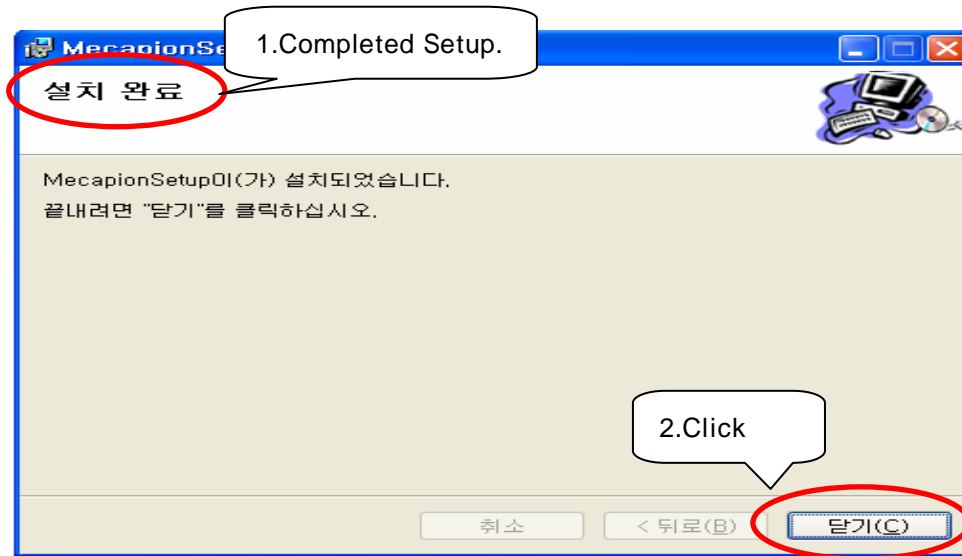
(1) Download program

- a. ID : guest1
- b. Password : guest1
- c. Steps : Reach to our website(www.mecapion.com) -> English -> Data room -> Software -> PC Communication Program

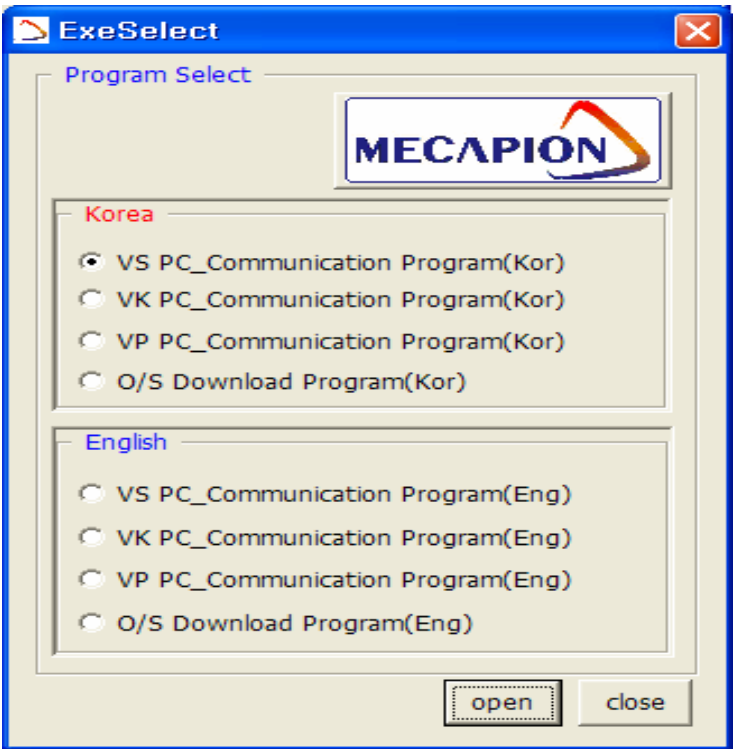
(2) Sepup Communication Program.





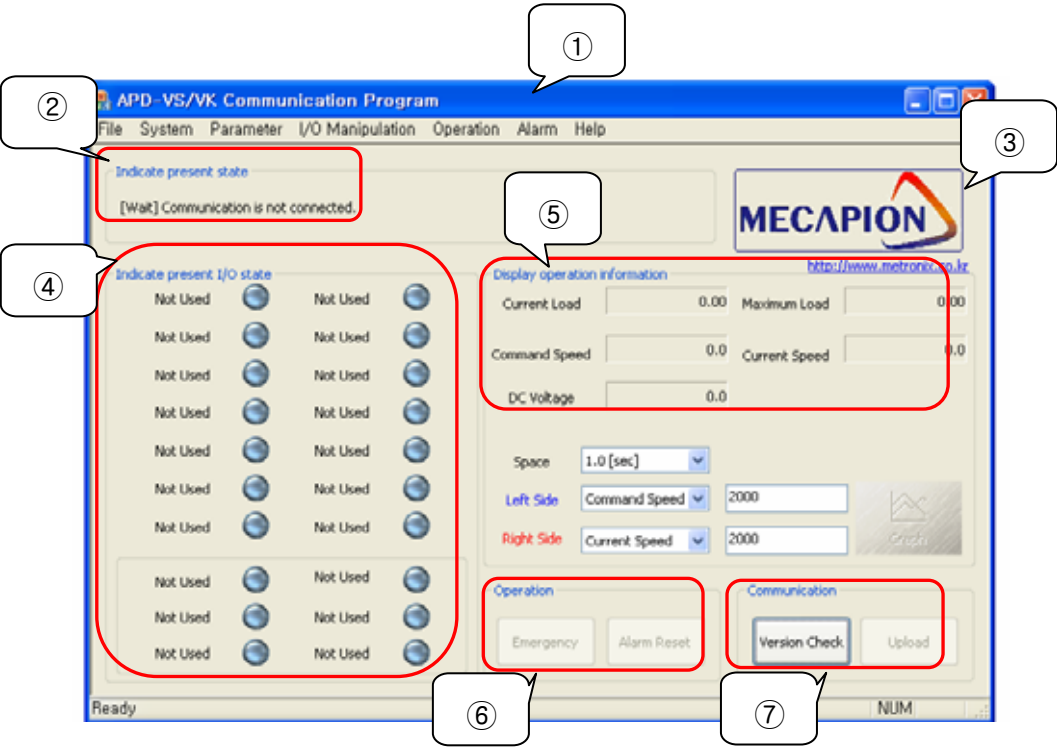


5.2 Program Select



5.3 Article

5.3.1 Program Explanation



Title : Program name, Drive version, Capacity.

Present State : Show PC and servo state

MECAPION : Company Logo

Present I/O State : ON : Red, OFF : Blue, Show [Pd-016]

⑤ Display Operation information

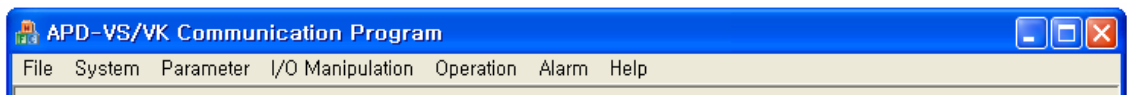
Operation : Emergency, Alarm Reset

Communication

- Version Check : First, check it when you operate program
- Upload : Collect all data from servo drive. You have to upload before starting communication.

5.3.2 Program Menu

VS



- File
 - Print : Print parameter of servo.
 - Print Preview
 - Exit : Finish communication program.
- System : **Setup System.**
- Parameter : **Edit parameter of servo.**
- I/O Manipulation
 1. I/O Temporary Manipulation : **Manipulate contact temporary.**
(On servo OFF, change to original state)
 2. I/O Permanent Manipulation : **Manipulate contact permanently.**
(On servo OFF, Maintain current state)
- Operation
 1. Test operation: Test operation or Jog operation by setting speed, direction, time, Auto operation is available.
 2. Tuning Operation : Set speed, make tuning operation.
 3. Menu Initialization : Initialize parameter of servo. If you want PC communication, check version and upload.

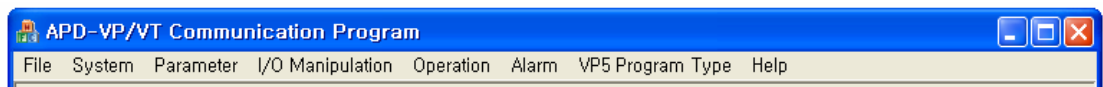
※Caution: After menu initialization, all data will be eliminated. Please use this menu after deep consideration.

- Alarm

1. Alarm History : You can check and eliminate alarm history.

- Help

VP



- VP5 program type : Edit VP5 program.

*** Other menus are same with VS series

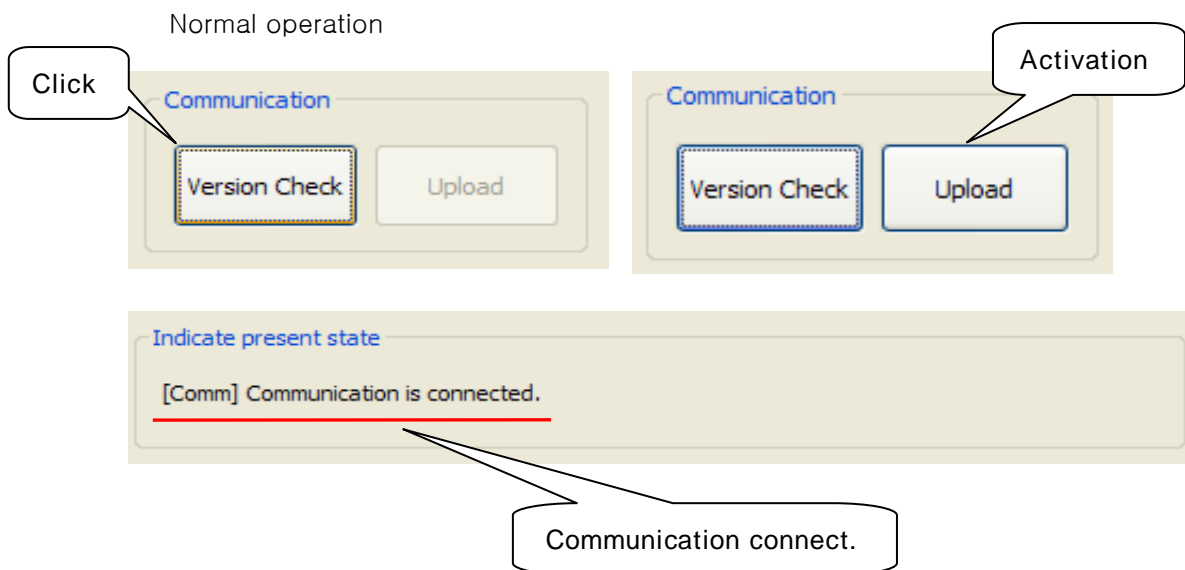
5.4 How to operate program

5.4.1. Common program (VS, VP, VK)

1. Version check : Check version of servo drive.

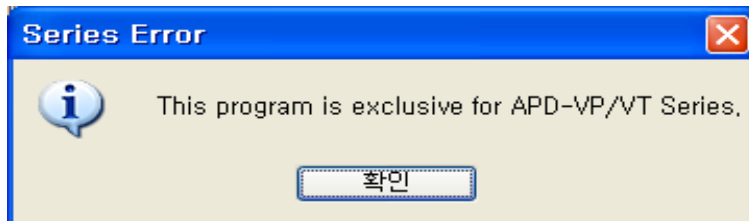
Same version : Activate upload button.

Different version : Show error box.

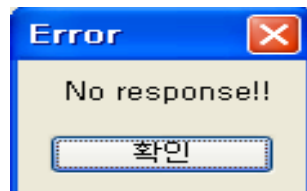


Errors

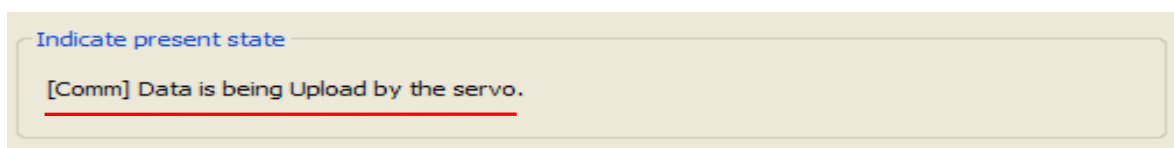
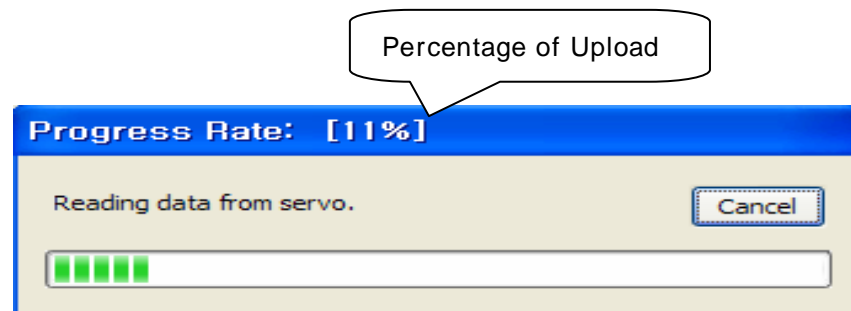
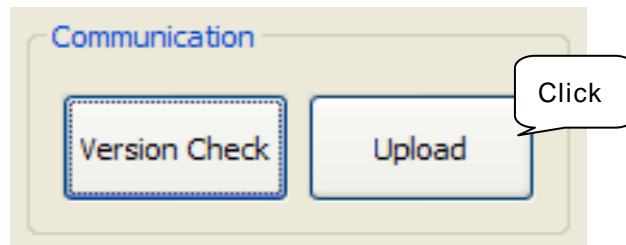
- Operate VS drive with VP program



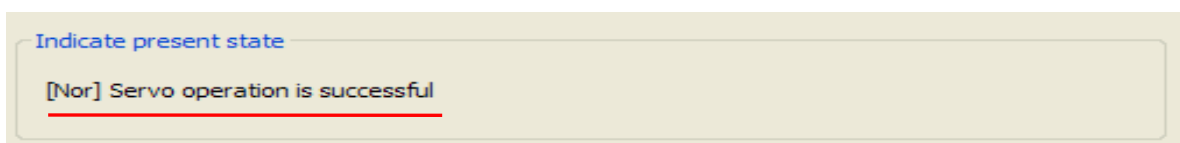
- No response



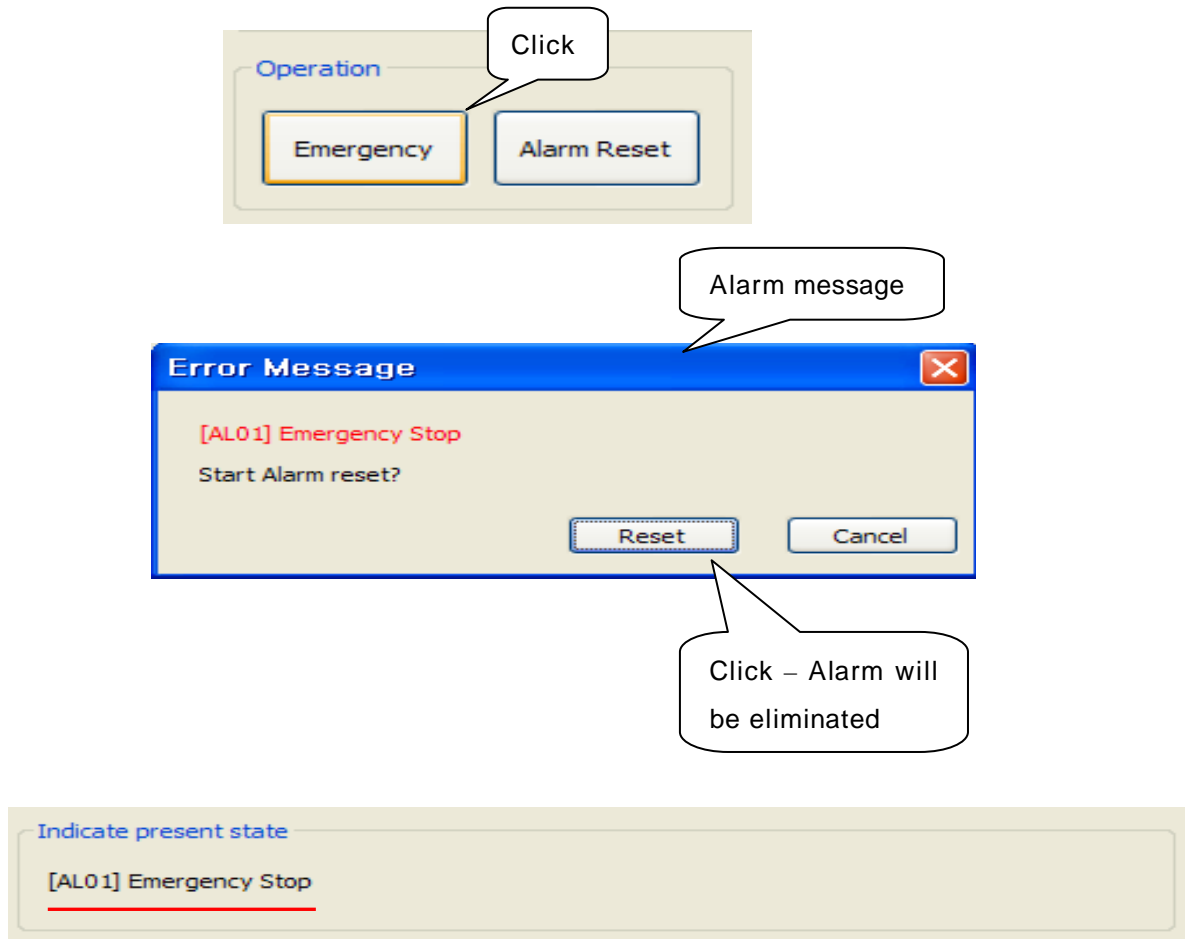
- (1) Upload : Upload data of servo drive to PC.
(Parameter, Contacts, Alarm history, Servo state etc)



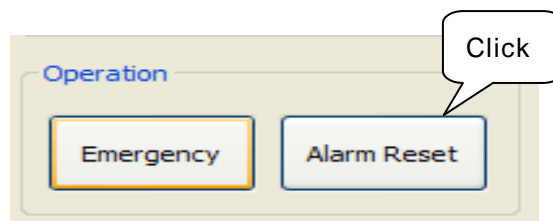
- (2) Complete upload



(3) Emergency stop : Stop servo motor temporary



(4) Alarm Reset : Eliminate alarm



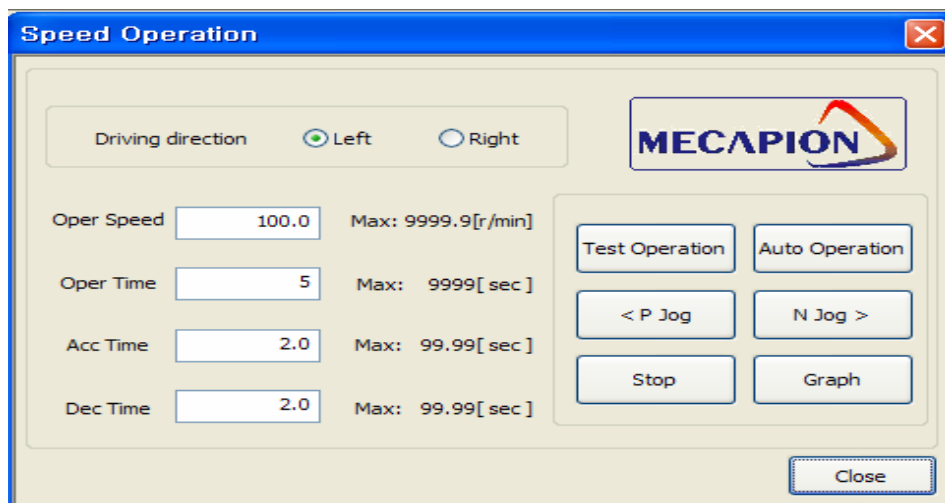
(5) Operation : Servo TEST program.

※ Caution : Other purpose except servo test will be matter so,
Don't use any other purpose.

Speed Operation

- Test operation is available by using operating speed, direction, time etc, jog operation and auto operation are available.
- You can check graph of operation status.

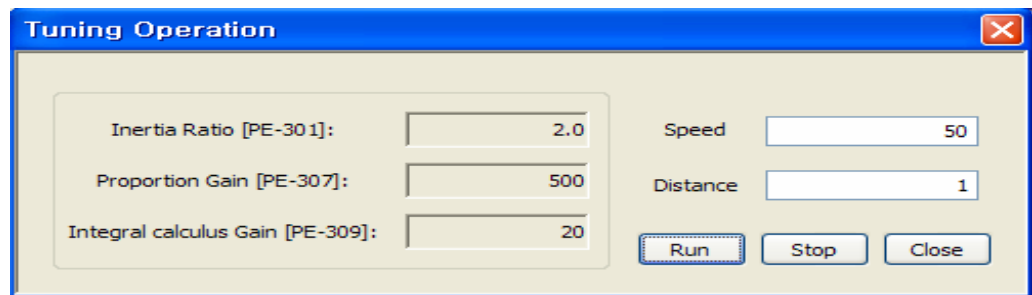
[Step: Manue “Operation” → “Speed Operation”]



- Test operation
 - Doing test operation by setting direction, speed, time, acc/deceleration time.
- P jog operation
 - CW operation as much as seting speed.
- N jog operation
 - CCW operation as much as seting speed..
- Auto operation
 - Test operation, jog operation will be available in stop.

Tuning operation – Check inertia ratio, proportion gain, integral calculus gain.

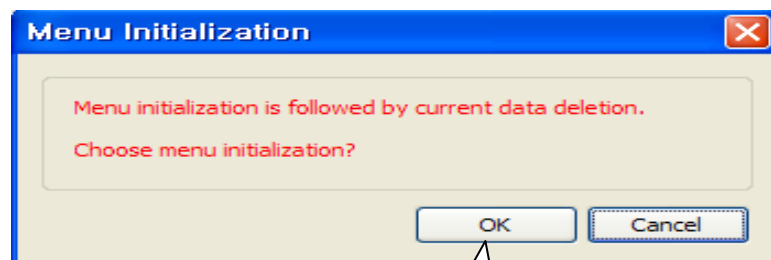
[Step: Manue “Operation” “Tuning operation”]



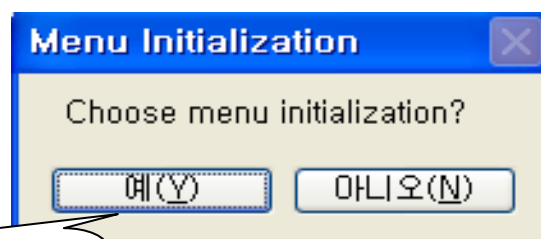
- Tuning operation will be stopped eventhought click “close” whiling tuning operation without stop.

Menu initialization – Be careful..

[Step: Manue “Operation” “Menu initialization”]



Click

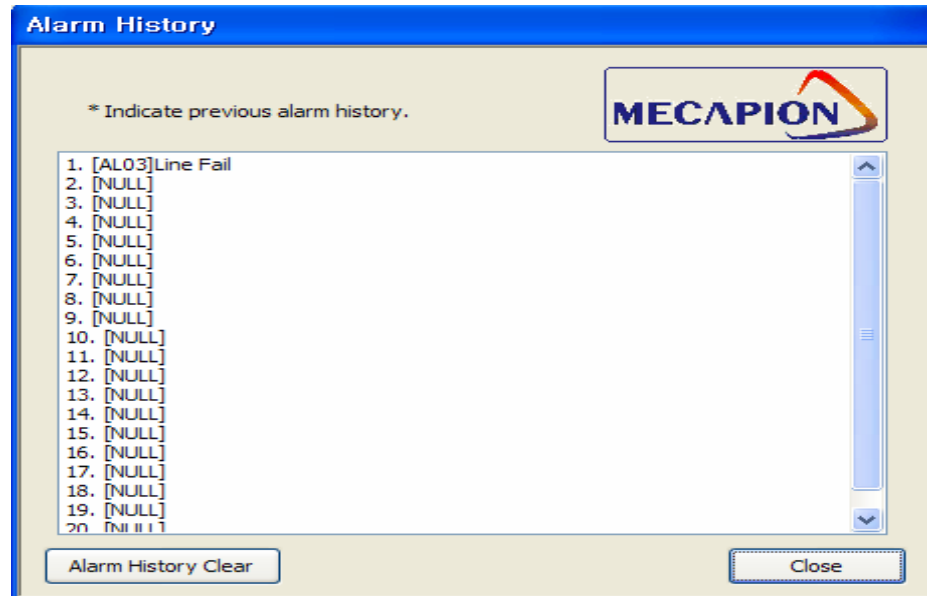


Click
=> Initialization

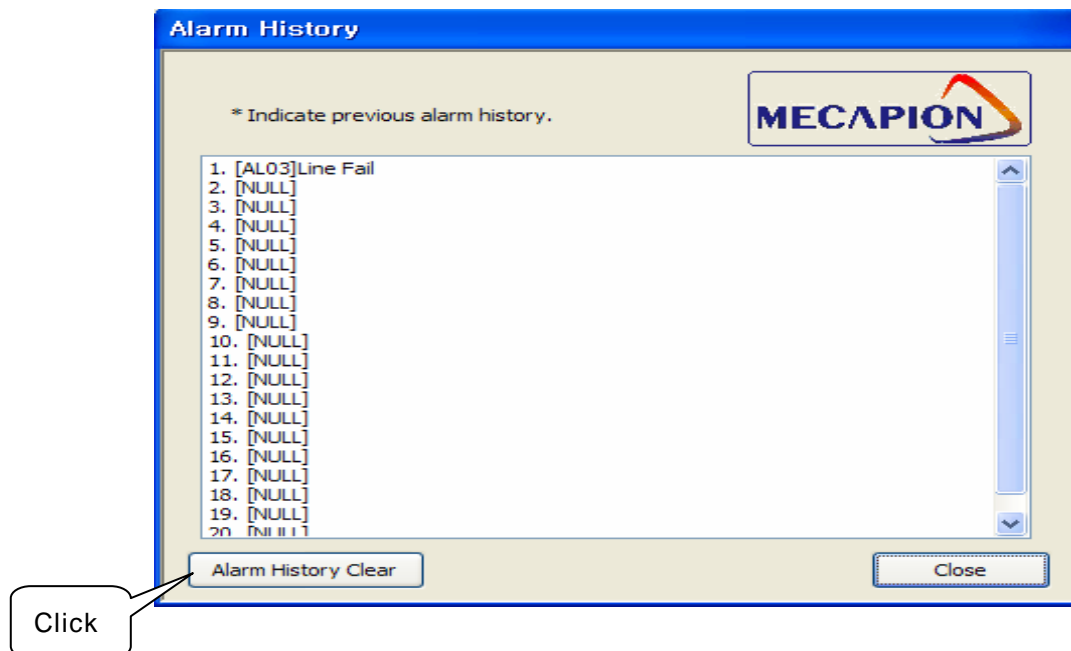
(6) Alarm : Check current alarm of servo.

[Step: Menu “Alarm” → “Alarm history”]

– Show all alarm history.



– Alarm history will be removed.

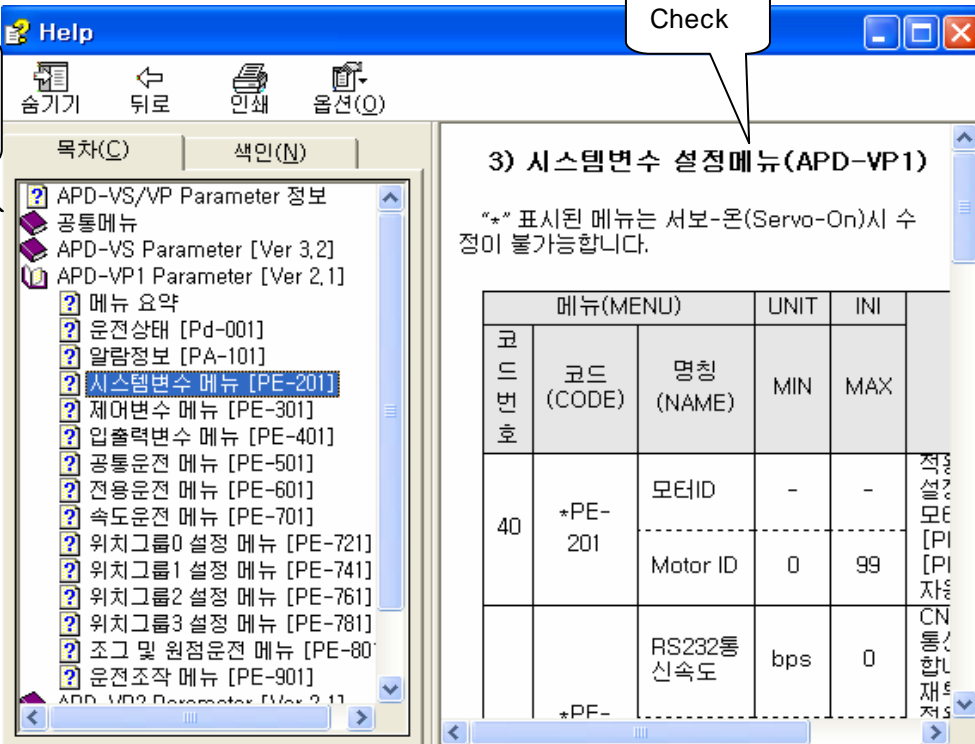


(7) Help : Check manual of servo drive.

[Step: Menu “Help” → “Help”]

Click required
information

Check



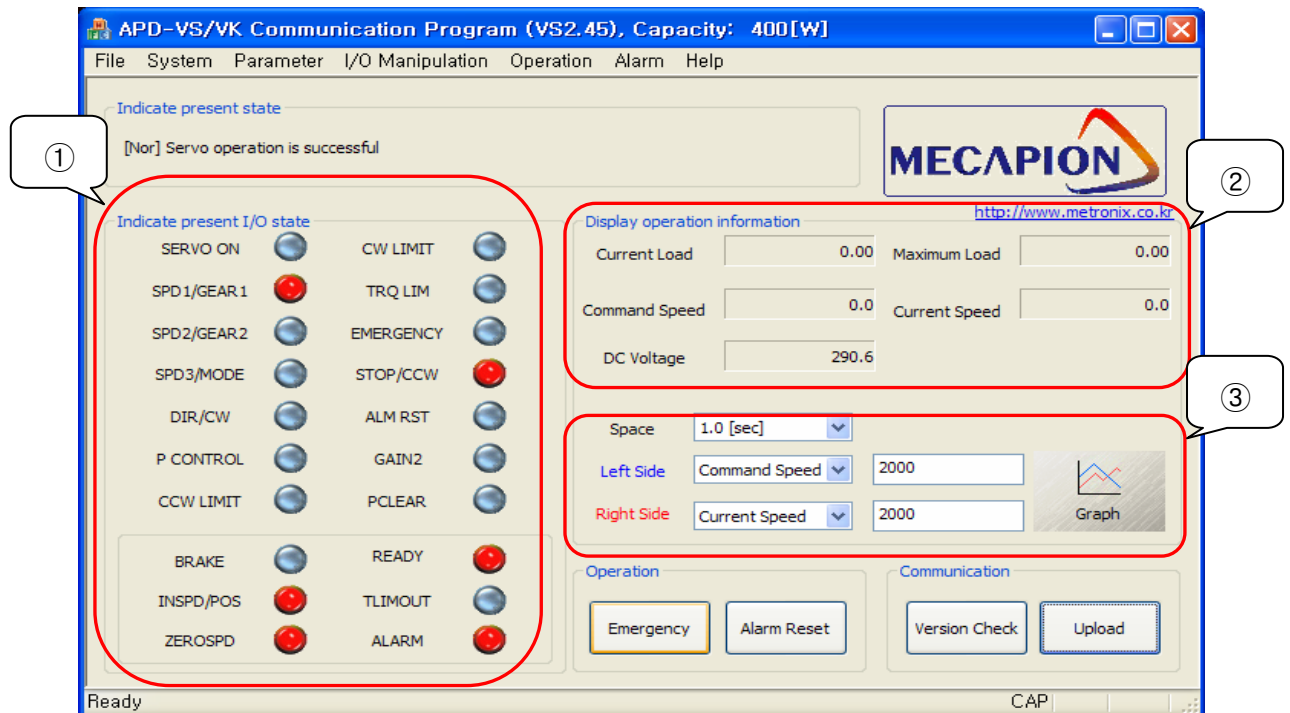
3) 시스템변수 설정메뉴 (APD-VP1)

“*” 표시된 메뉴는 서보-온(Servo-On)시 수정이 불가능합니다.

메뉴(MENU)			UNIT	INI	
코드 번호	코드 (CODE)	명칭 (NAME)	MIN	MAX	
40	*PE-201	모터ID	-	-	적용 설정 모터 [PI [PI 자속
		Motor ID	0	99	
		RS232통신속도	bps	0	CN 통신 할 재 설정
	*PF-				

5.4.2 VS Program

(1) VS Screen



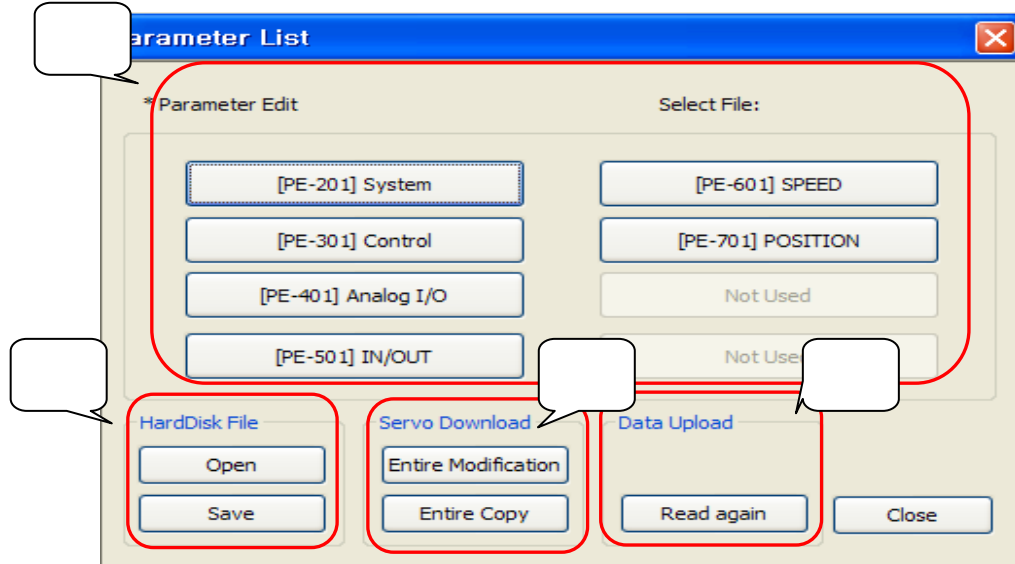
Indicate present I/O state : Check contacts.

Display operation information : Show current load, Max load,
command speed, current speed, DC voltage.

Graph : Sow graph same with setting value.

(2) VS Parameter List

[Step: Menu “Parameter” → “Parameter Edit”]



Parameter edit : Click required parameter.

HardDisk file

- Save : Save servo parameter data to PC.

You can check the data with Exel file.

- Open : Can open parameter data.

Servo Download : Can copy changed data to servo drive.

- Entire Modification : Transfer data to servo
- Entire Copy : Transfer all data without changed data.

Data Upload : Read again parameters of servo drive.

(3) VS Parameter Edit

[Step: Menu “Parameter” → “Parameter Edit” → “[PE-301] Control”]

Parameter Edit

Group Name: Control

[PE-301] Inertia Ratio	3	Set	[PE-311] Speed IN FT[ms]	0.0	Set
[PE-302] Position P Gain	50	Set	[PE-312] Speed FB FT[ms]	0.5	Set
[PE-303] Position P Gain2	70	Set	[PE-313] Zero Speed Gain	0.0	Set
[PE-304] P Feedforward[%]	0	Set	[PE-314] TORQ. CMD F	0.0	Set
[PE-305] P FF FLT TC[ms]	0	Set	[PE-315] DE-RESONANC	0	Set
[PE-306] P CMD FLT TC[ms]	0	Set	[PE-316] Notch Frequency	299	Set
[PE-307] Speed P Gain	500	Set	[PE-317] Notch BandWidth	100	Set
[PE-308] Speed P Gain2	800	Set	[PE-318] Overload Offset	1	Set
[PE-309] Speed I TC [ms]	20	Set	[PE-319] Speed P Control	100.0	Set
[PE-310] Speed I TC2[ms]	13	Set	[PE-320] Zero Speed Lock	1	Set

Caution

- * Use entire modification in case of motor[PE-201] modification.
- * Communication speed[PE-202] cannot be modified.

Close

Parameter input : Input parameter value by user

Red : Parameter was changed.

The data of servo drive are not changed yet.

Blue : Parameter was changed and transferred to servo drive.

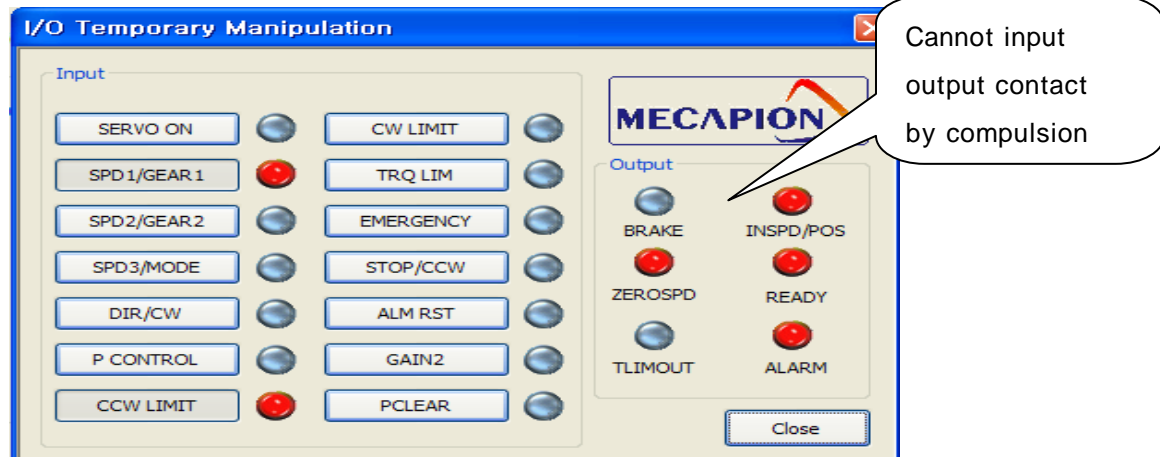
Set button : Button for transfer parameter to servo drive.

(4) VS contact Setting

I/O temporary manipulation : Setting contact temporary.

Servo OFF => Change to initial data.

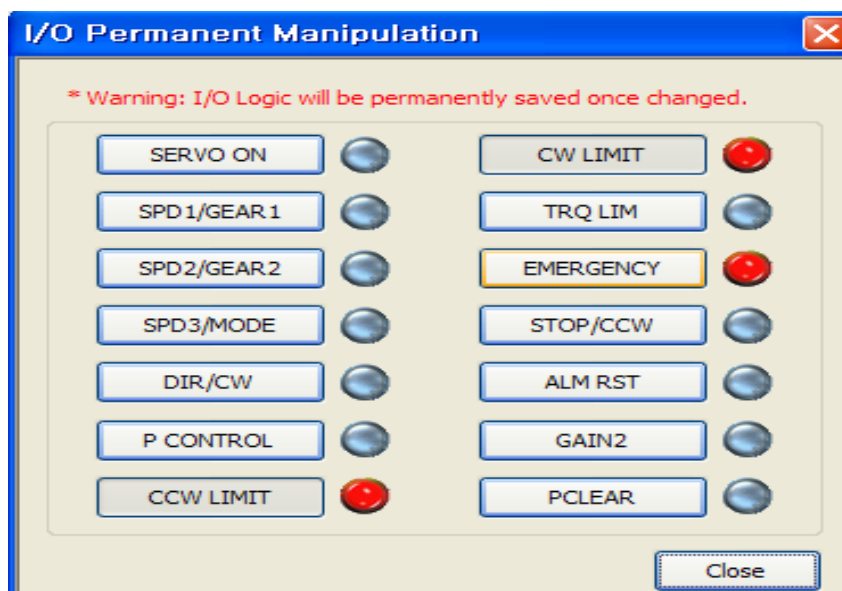
[Step: Menu "I/O Manipulation" → "I/O Temporary Manipulation"]



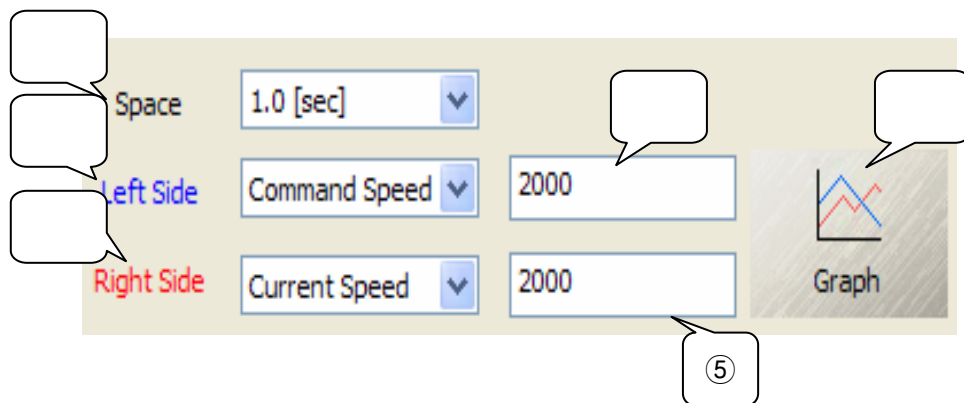
I/O Permanent Manipulation : Setting contact permanently.

Servo OFF => Maintain data.

[Step: Menu "I/O Manipulation" → "I/O Permanent Manipulation"]



(4) VS Graph setting



Space : Value on X axis

Graph will be showed by space setting time.

Left side : Value on left Y axis.

Related contents will be marked with blue.

Right side : Value on right Y axis.

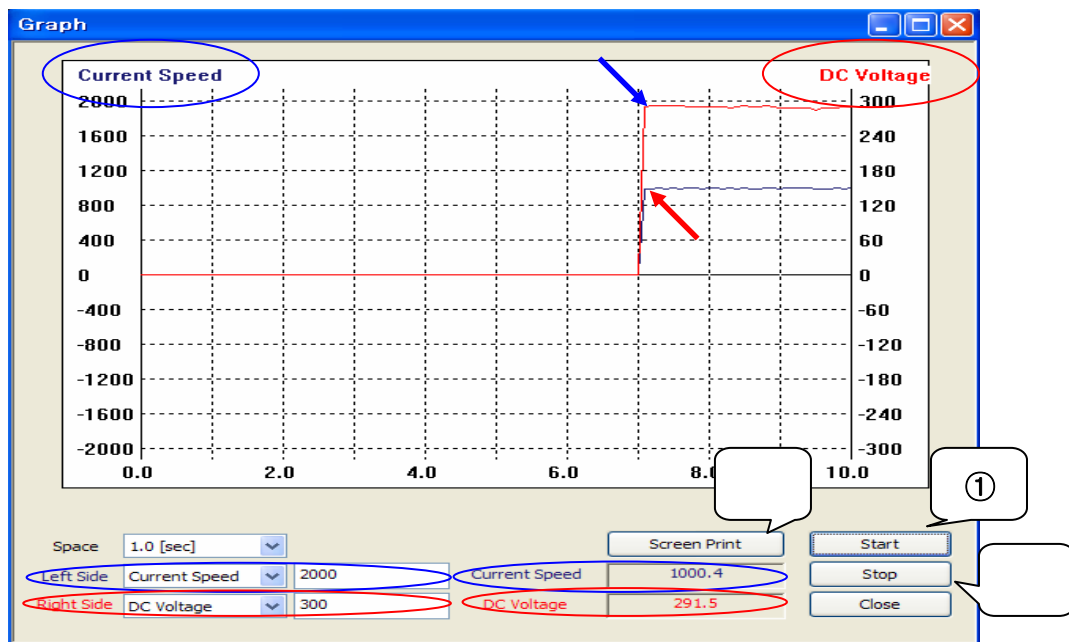
Related contents will be marked with red.

Left side Max value: Setting max value on left Y axis.

Right side Max value: Setting max value on right Y axis.

Graph : Click button then check graph.

(5) VS graph



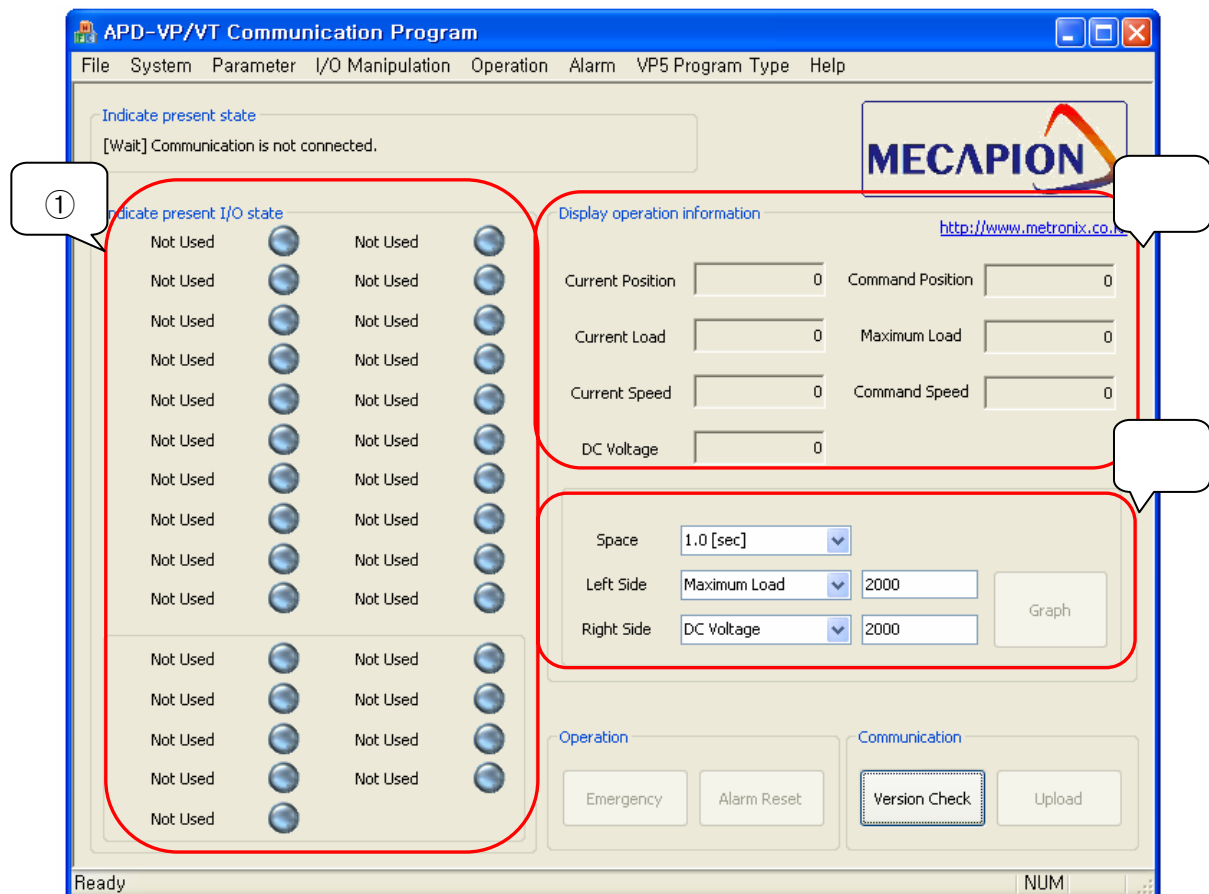
Start : Execute graph by setting data.

Stop : Stop graph temporary. Hit start, graph will be executed from beginning.

Screen Print : Print captured graph.

5.4.3 VP Program

(1) VP Screen



Indicate present I/O state : Check contacts.

(More than VS drive)

Display operation information : Show current load, Max load.

command speed, current speed, DC voltage

Graph : Sow graph same with setting value.

(2) VP Parameter List

[Step: Menu “Parameter” → “Parameter Edit”]



Parameter edit : Click required parameter.

HardDisk file

- Save : Save servo parameter data to PC.

You can check the data with Exel file.

- Open : Can open parameter data.

Servo Download : Can copy changed data to servo drive.

- Entire Modification : Transfer data to servo
- Entire Copy : Transfer all data without changed data.

Data Upload : Read again parameters of servo drive.

(3) VS Parameter Edit

[Step: Menu “Parameter” → “Parameter Edit” → “[PE-301] Control”]

Parameter Edit

Group Name: Control

[PE-301] Inertia Ratio	3	Set	[PE-311] Speed IN FT[ms]	0.0	Set
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[PE-303] Position P Gain2	70	Set	[PE-313] Zero Speed Gain	0.0	Set
[PE-304] P Feedforward[%]	0	Set	[PE-314] TORQ. CMD F	0.0	Set
[PE-305] P FF FLT TC[ms]	0	Set	[PE-315] DE-RESONANC	0	Set
[PE-306] P CMD FLT TC[ms]	0	Set	[PE-316] Notch Frequency	299	Set
[PE-307] Speed P Gain	500	Set	[PE-317] Notch BandWidth	100	Set
[PE-308] Speed P Gain2	800	Set	[PE-318] Overload Offset	1	Set
[PE-309] Speed I TC [ms]	20	Set	[PE-319] Speed P Control	100.0	Set
[PE-310] Speed I TC2[ms]	13	Set	[PE-320] Zero Speed Lock	1	Set

Caution

- * Use entire modification in case of motor[PE-201] modification.
- * Communication speed[PE-202] cannot be modified.

Close

Parameter input : Input parameter value by user

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The data of servo drive are not changed yet.

Blue : Parameter was changed and transferred to servo drive.

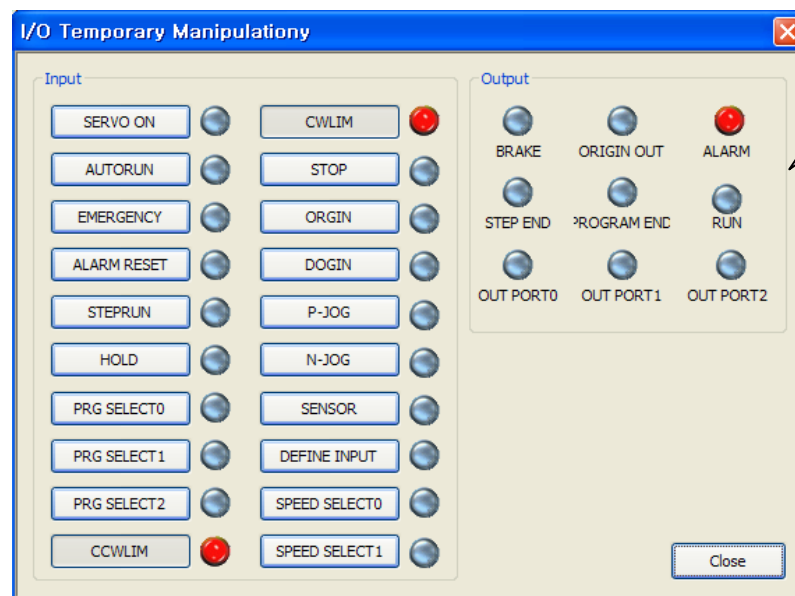
Set button : Button for transfer parameter to servo drive.

(4) VP contact Setting

I/O temporary manipulation : Setting contact temporary.

Servo OFF => Change to initial data.

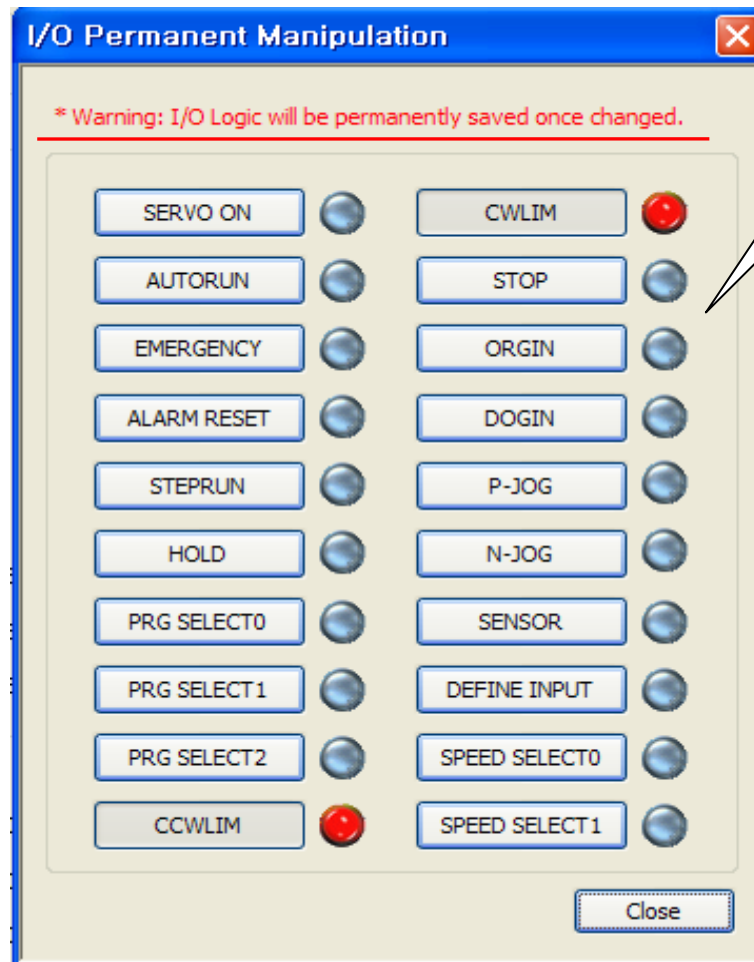
[Step: Menu “I/O Manipulation” → “I/O Temporary Manipulation”]



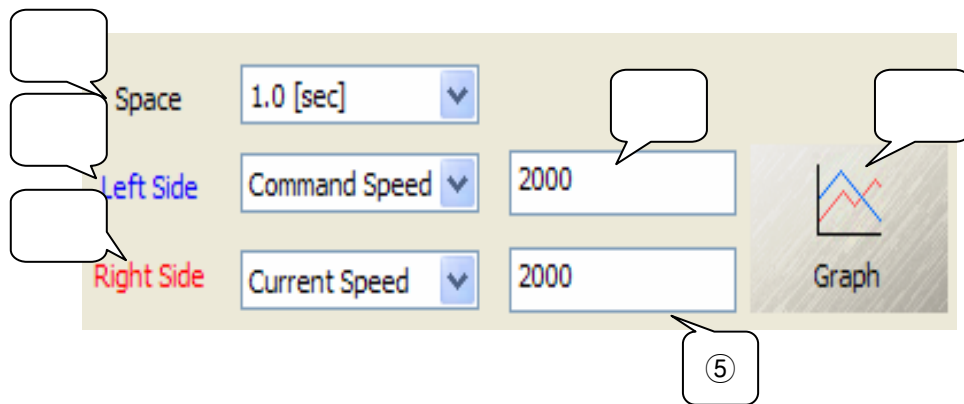
I/O Permanent Manipulation : Setting contact permanently.

Servo OFF => Maintain data.

[Step: Menu "I/OManipulation" → "I/O Permanent Manipulation"]



(4) VP Graph Setting



Space : Value on X axis

Graph will be showed by space setting time.

Left side : Value on left Y axis.

Related contents will be marked with blue.

Right side : Value on right Y axis.

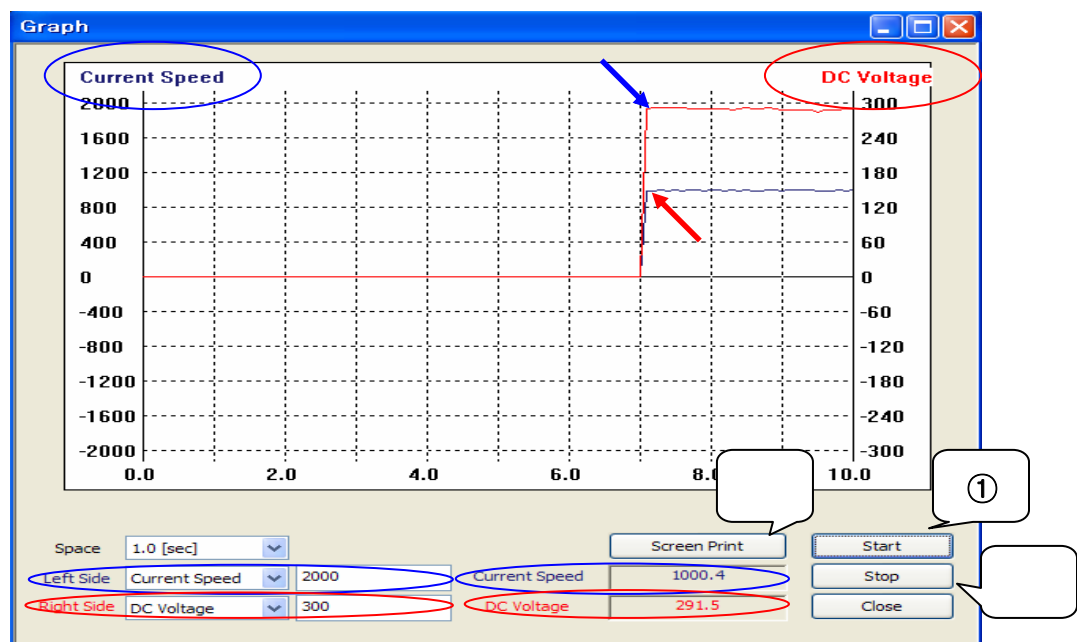
Related contents will be marked with red.

Left side Max value: Setting max value on left Y axis.

Right side Max value: Setting max value on right Y axis.

Graph : Click button then check graph.

(5) VP Graph



Start : Execute graph by setting data.

Stop : Stop graph temporary. Hit start, graph will be executed from beginning.

Screen Print : Print captured graph.

(5) VP5 Program Edit : The user change program by themselves



Check program or change program by double clicks.

File Save : Save program to PC with Excel file.

File Open : Open program from PC.

Entire Copy : Copy indicated program to servo drive.

Program Read : Read program from servo drive.

Program Selection : Choose program to read.

Flash Save : Save program to servo flash memory.

(Power OFF => Program won't be eliminated.)

VP5 Step Edit

(Please refer to VP5 manual for more information.)

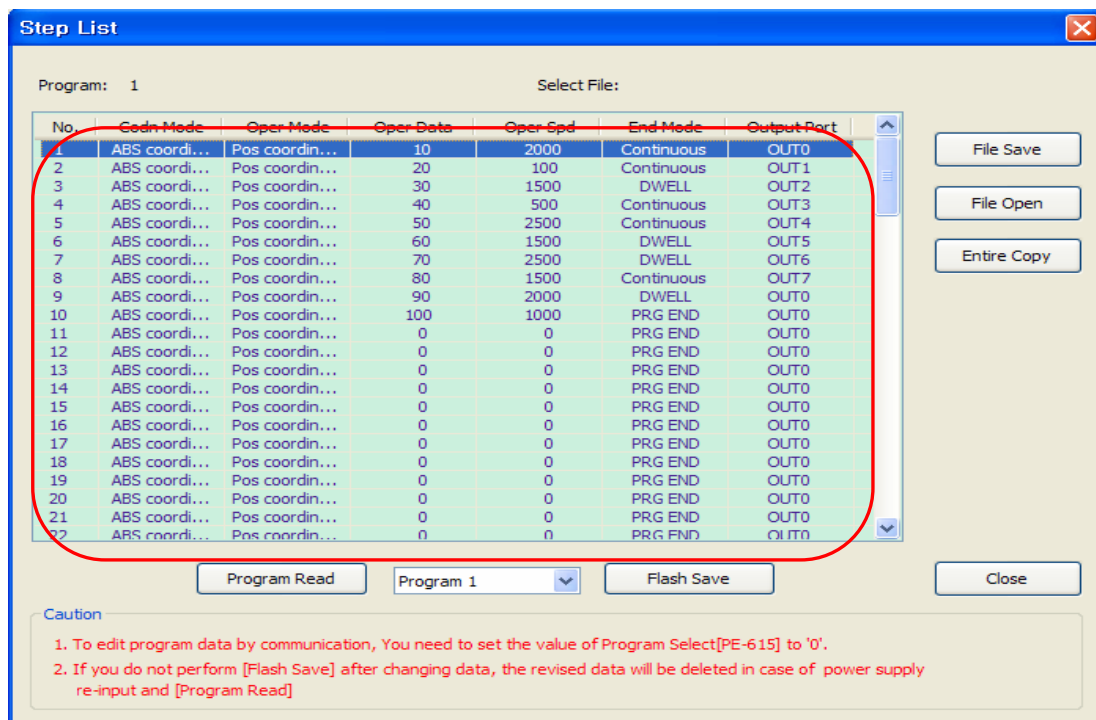
The screenshot shows the 'Step Edit' dialog box with the following settings:

- Program: 1 (circled in red)
- Step: 1 (circled in red)
- Codn Mode: ☒ ABS coordinate, ☐ Relat coordinate, ☐ Infn coordinate
- Oper Mode: ☒ Pos coordinate, ☐ Pos increment, ☐ Time operation, ☐ Infn operation
- Oper Data: 10
- Oper Spd: 1000
- Acc Time: 100
- Dec Time: 100
- End Mode: ☐ PRG END, ☐ STOP, ☐ DWELL, ☒ Continuous, ☐ Sensor
- End Range: 1
- End Time: 2000
- Output Port: ☒ OUT0, ☐ OUT1, ☐ OUT2, ☐ OUT3, ☐ OUT4, ☐ OUT5, ☐ OUT6, ☐ OUT7

Buttons at the bottom: Set, Close.

- Red - The value was changed.
(If you didn't input value, they're initial values.)
- Click Set : Will be saved in program step.
(Step no.1 in program no.0.)

In case of reading VP5 program

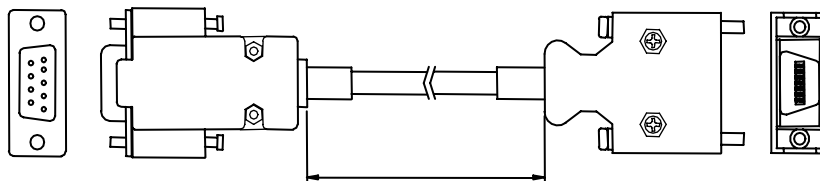


- Reading program or file open : Program will be listed as above.
- Double clicks of required step : User can change the program.

6. Communication Spec

6.1 RS232C Spec

Article		Spec
Communication		RS-232C Standard
Data Form	Data bit	8bit
	Stop bit	1bit
	Parity	None
Synchronism		Non-Synchronism
Transfer speed		9600 /19200 bps[PE-202]
Transfer distance		Max 15[M]
Consuming Current		Less than 100[mA]



[PC- Serial Port]

[Servo Drive – CN3]

Article	PC-Serial Port	Servo drive – CN3
Connector	HDEB-9S	10114-3000VE
Case	3600-09-G-L	10314-52A0-008
Wiring	No.2(RXD)	No.6(TXD)
	No.3(TXD)	No.5(RXD)
	No.5(GND)	No.11, No.12(GND)
	Case(Shield)	Case(Shield)
Cable length	1,2,3,5[m]	

※ We recommend to use twist pair shield cable for communication. If you use wrong cable, communication jam or wrong operation can be happen.

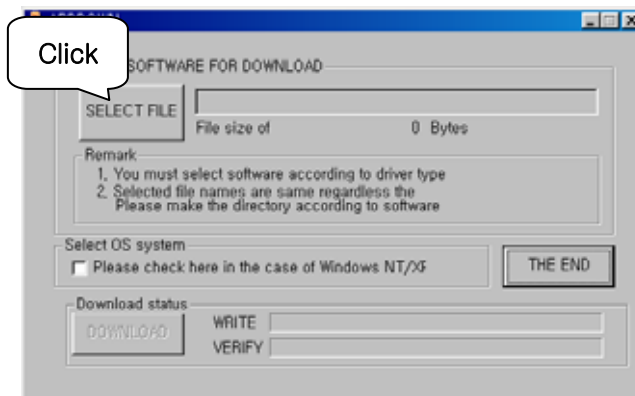
7. Download Program for Windows

1. Program set-up

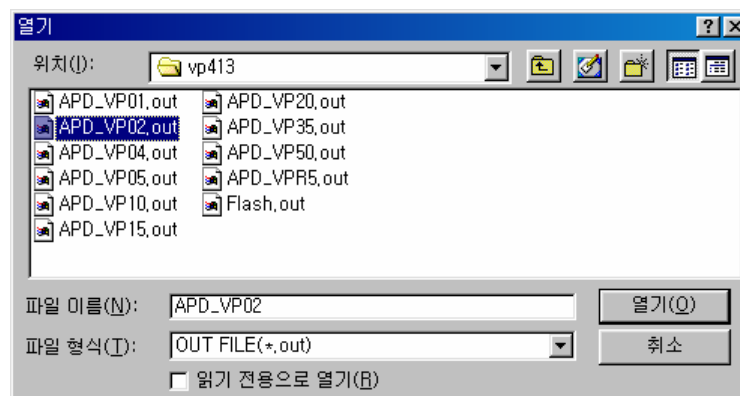
- ① Window 9x,me – Copy msucr70d and mfc70d to c:\windows\system.
- ② Window NT/XP – Copy msucr70d and mfc70d to c:\windows\system32.
- ③ “boot.bin, Portx.dll, PortX.sys” must be the same directory with applicable program.
- ④ APDDOWN_K (Korean) APDDOWN_E(English) – Select required langue version.

2. How to use...(APDDOWN_E(English))

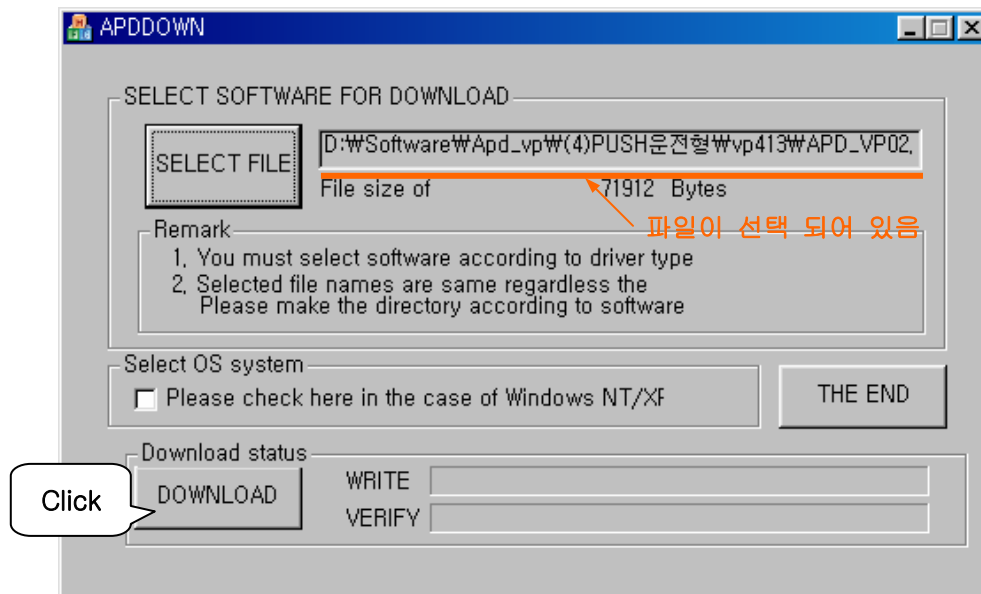
- ① Select “SELECT FILE”.



- ② Download the correct *.out file for servo drive.

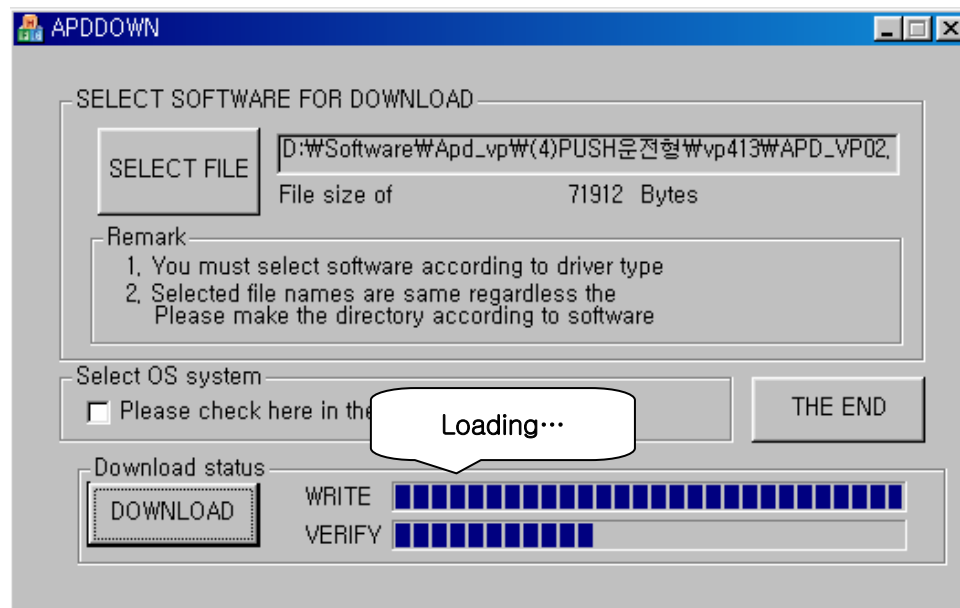


③ Click download.(Win98)



♠ Windows NT/XP – Click “Select OS system”.

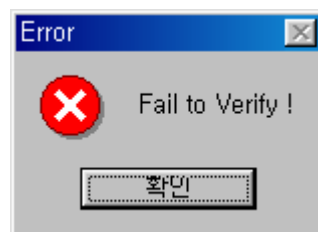
④ Loading



- ⑤ Successful download.



- ⑥ Download error.



- ♠ Download again after drive power on.