# Robostar Robot Controller N2 Series UNI-HOST Manual

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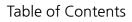
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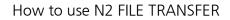


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### Chapter 1 How to Use N2 FILE TRANSFER

#### 1. Prior to Program Execution

This File Transfer Program enables a communication between N2 Robot Controller and PC so that the files or parameters can be transmitted or received.

The communication between N2 Robot Controller and PC is enabled via only serial interface (RS-232C).

Prior to executing the program, it is required to set the same baud rate in both the Controller and a PC by using a teach pendant.

Default communication speed (baud rate) was set to be 115,200bps.

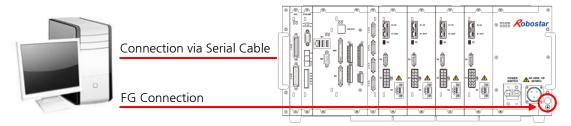


Figure 1-1 Connection Method between Robot Controller and PC

Controller and PC must be connected via a proper cable with pin configurations as below.

#### Pin Map

P	с	Cont	roller
Signal	Pin	Signal Name	Din No
Name	No.	Name	Pin No.
RXD	2	RXD	2
TXD	3	TXD	3
GND	5	 GND	5

■ Connection Tips and Physical Specifications

- A shielded cable of over 0.3mm<sup>2</sup> in the min wire thickness must be used.
- A shield in the cable must be connected to connector frames at both ends.
- Each Frame Ground (FG) of both Controller and host PC must be connected together to make the same level.
- The length of a serial cable must be less than 10m.
- Connectors at both ends of the cable must be D-Sub 9s (Socket Type).



#### 2. Default Screen

When double clicking the FileTransfer.exe file to execute the File Transfer Program, you can verify the main screen as shown in Figure 1-2. The main screen of File Transfer Program is composed of two windows; the file list window of Controller and PC, and the trace window showing communication status.

N2 FileTransfer V1.0.0     File View ETC Help     R     Yew		- • ×
AA (1) Dir C:W Fi	Controller (4)	
Name Size Step Po	vint Name Siz	e Step Point
0 00	bject(s)	0 Object[s]
6 Ready		NUM

Figure 1-2 Main Screen for File Transfer

- ①: This indicates a working folder of PC.
- ②: This activates the window for folder change of PC if required.
- ③: This shows the files in working folder via a file list window of PC.

The blue border line indicates that a user currently selects the file list window of PC.

(4): This indicates the version of Controller.

©: This shows the files of Controller that were connected to the file list window of Controller.

©: This is a trace window that displays the data in transmitting & receiving or error messages occurred during the communication between Controller and PC.



#### Description of Controller Files

Figure 1-3 shows the list of files in the internal storage of Controller. These include JOB file, Point Variable file, Public Parameters and ROBOT Parameters by channel.

ontroller			
Ver: 01.00.01-C3			
Name	Size	Step	Point
📔 BGTD.JOB	5 KB	186	0
📔 BGTF.JOB	1 KB	10	0
📔 BJ7.JOB	1 KB	0	0
🛃 MASTER.JOB	1 KB	11	2
OUT.JOB	57 KB	26	901
INTEGER.GIT	4 KB	1000	
FLOAT.GFT	8 KB	1000	
🗋 GP.GPT	85 KB		2000
DUBLIC.PAR	8 KB		
SY0.PAR	8 KB		
SY1.PAR	8 KB		
SY2.PAR	8 KB		

Figure 1-3 File List in Controller

FILE NAME	DESCRIPTION
INTEGER.GIT	Common Integer Variable file of Controller
FLOAT.GFT	Common Real Number Variable file of Controller
GP.GPT	Common Global Point file of Controller
PUBLIC.PAR	Common Parameter Setting file of Controller
SY0.PAR	Robot 1 Parameter Setting file of Controller
SY1.PAR	Robot 2 Parameter Setting file of Controller
SY2.PAR	Robot 3 Parameter Setting file of Controller



#### 3. FILE Menu

#### 3.1 Connect

T/P 파라미터 설정

/1			
-	DEPTH	PUB - HW_CONF(1) - COMM - SERIAL	
	TP screen	<pre></pre>	
	Parameter	The parameter is to set RS-232C communication standard.	
-	description		
_	Detail	<ol> <li>Since there is only one Serial(RS-232C) port, PROTOCOL must be set to HOST to use HOST for normal communication. If not, communication won't be connected.</li> <li>If PROTOCOL parameter is set to STRCOM, move to 3.HOST menu in the main menu without parameter change to enable Communication with PC through Unihost.</li> </ol>	

When no communication is established between PC and Robot Controller, [Connect] menu is activated as shown in Figure 1-4. Select [File]-[Connect], if a communication is necessary.

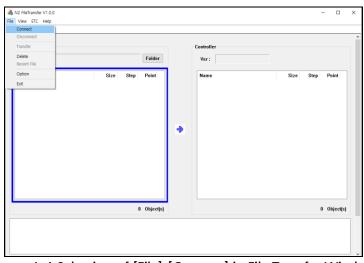


Figure 1-4 Selection of [File]-[Connect] in File Transfer Window



Once selecting [Connect] for communication, a popup window for establishing a communication appears as shown in Figure 1-5 below. A communication between PC and Controller is started when pressing the [Connect] button after setting a port number to communicate. Default communication speed (baud rate) was set to be 115,200bps.

연결			$\times$
포트:	COM4	~	
	연결	닫기	
	연결	닫기	

Figure 1-5 Popup Window for File Transfer Program [Connect]

In case of successful connection for communication, Controller version and a file list of internal storage of Controller are displayed as shown in Figure 1-6 and a Log history appears in the trace window.

■ Trace window

	Request Controller Info	
Request Controller File List	ОК	
	Request Controller File List	
ОК	ОК	

A Dir C:₩		Folder	Controller Ver : 01.00.01-C3			
Name	Size Step	Point	\$ Name BGTD.JOB BGTD.JOB BGTJ.JOB BGTJ.JOB BJJ.JOB MGTFR.JOB MGTFR.JOB MGTFR.JOB MGTFR.JOB MITEGR.GTT FLOAT.GFT GP.GPT PUBLIC.PAR SYLPAR SYLPAR SYLPAR SYLPAR	Size 5 KB 1 K8 1 K8 57 K8 8 K8 8 K8 8 K8 8 K8 8 K8 8 K8 8 K8	Step 186 10 11 26 1000 1000	Point 0 0 2 901
	t	) Object(s)			12	2 Object(s)

Figure 1-6 Screen in case of successful Connect



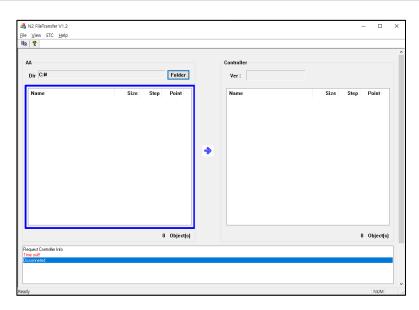


Figure 1-7 Screen in case of fail Connect



- 1) In case of connection failure for communication, check as described below. -
  - Check the Com Port Number.
  - -Check the Serial Cable between PC and Controller.



#### 3.2 Disconnect

It is activate as shown in Figure 1-8 only when a communication between PC and Controller was established. Selecting [File]-[Disconnect] terminates the communication.

N2 FileTransfer V1.2 File View ETC Help Connect Disconnect Transfer Delete Recent File Option Exit	Size Step Point	•	Controller Ver : 01.00.02-C3 BGTD_JOB BGTF_JOB TEST_JOB INTEGER.GIT FLOAT.GFT GP.GFT PUBLIC.PAR SY0.PAR SY1.PAR SY2.PAR	Size 5 KB 5 KB 1 KB 4 KB 8 KB 8 KB 8 KB 8 KB 8 KB 8 KB	Step 204 204 700 1000	Point 0 0 2000
	0 Object(s)				10	Object(s)
Request Controller Info OK Request Controller File List OK						

Figure 1-8 Selection of [File]-[Disconnect] in File Transfer Window

■ Trace Window

Disconnect



#### 3.3 Transfer

Figure 1-11 depicts a screen that transfers the files (INTEGER, FLOAT) within Controller to a PC. As shown in Figure 1-9 and Figure 1-10, after selecting the files that you want to transfer, then click [File]-[Transfer] in the menu tab on the top of screen, or click the right button of your mouse to select [Transfer] menu and drag them into the PC file list. The same procedure applies when transferring the files from PC to Controller.

Disconnect Transfer			Controller			
Delete Recent File		Folder	Ver: 01.00.02-C3			
Option Exit	Size	Step Point	Name BGTD_JOB BGTF_JOB TEST_JOB FLOATGET, GP.GPT PUBLIC.PAR SYL.PAR SY2.PAR	Size 5 KB 5 KB 4 KB 8 KB 8 KB 8 KB 8 KB 8 KB 8 KB	Step 204 204 1000 1000	Point 0 0 2000
		0 Object(s)			10	Object(s

Figure 1-9 File Transfer Method 1 in File Transfer Window

ame		Size	Step	Point
BGTD.JOB		5 KB	204	0
BGTF.JOB		5 KB	204	0
TEST.JOB	_	1 KB	7	0
INTEGER **	Transfer	<b>4 KB</b>	1000	
FLOAT.G	Delete	8 KB	1000	
GP.GPT		85 KB		2000
PUBLIC.	Refresh	8 KB		
SY0.PAR		8 KB		
SY1.PAR		8 KB		
SY2.PAR		8 KB		

Figure 1-10 File Transfer Method 2 in File Transfer Window



		Controller		
ir C:₩	Folder	Ver: 01.00.02-C3		
lame	Size Step Point	Name BGTD.JOB BGTF.JOB TEST.JOB	Size 5 KB 5 KB 1 KB	Step Poin 204 ( 204 ( 7 (
	Wait for a while until file copy compl Now copy [INTEGER.GTT] to PC	e	4 KB 8 KB 85 KB 8 KB 8 KB 8 KB 8 KB	1000 1000 2000
		Cancel		
	0 Object(s)			10 Obje

Figure 1-11 A Screen under File Transfer Execution in File Transfer Window

Log history as below occurs in the Trace window in case of a successful file transfer.

Trace	Window
IIace	VVIIIQOVV

Copy INTEGER.GIT file to PC OK Copy FLOAT.GFT file to PC OK

Log history as below occurs in the Trace window in case of a file transfer failure.

Ti	race Window	
	Error : Write file[1314]	

The Error Message above occurs when no execution file (REditor.exe) exists in Execute Path. Therefore, Execute Path setting in [File]-[Option] menu must be checked.



#### 3.4 Delete

Figure 1-12 indicates a screen for deleting the file (INTEGER) in PC. As shown in Figure 1-12 and Figure 1-13, you can delete files by selecting [File]-[Delete] menu after clicking the files, or by using the right button of your mouse.

The same method applies when deleting files from Controller.

Delete Recent File Option Edt FLUAT.GFT	Size 8 KB 15 KB	Step         Poi           1000         1000	r T Yer: D1.00.02-C3 Name BGTD_JOB BGTF_JOB TESTJOB INTEGER.GIT FLOAT.GET GP.GPT PUBL.CPAR SY0_PAR SY1_PAR SY2_PAR	Size Step 5 KB 204 5 KB 204 1 KB 7 4 KB 1000 8 KB 8 KB 8 KB 8 KB 8 KB 8 KB 8 KB	Point 0 0 0 2000
		2 Obj	(s)	10	Object(s)

Figure 1-12 File Delete Method 1 in File Transfer Window

A Dir C:#N2_JC	)B			Folder
Name	Transfer	Size	Step	Point
NTEGER (	Delete	8 KB	1000	
FLOAT.(	Refresh	15 KB	1000	

Figure 1-13 File Delete Method 2 in File Transfer Window

#### 3.5 Recent File

\* This function is not currently supported.



#### 3.6 Option

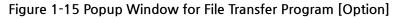
You can select the [File]-[Option] menu as shown in Figure 1-14 when setting the communication timeout value, execution file path and firmware path of the Program.

File V Ci D Tr D R	FileTransference Contract Section 2015		Size 15 KB		Folder	•	Controller Ver: 01.00.01-C3 Nme BGTD.JOB BGTD.JOB BGTJ.JOB MASTERJ.OB WOJ.JOB U.J.JOB INTEGER.GIT FLOAT.GFT CG.GPI PUBLIC.PAR SY0.PAR SY2.PAR	Size 5 KB 1 KB 1 KB 1 KB 57 KB 8 KB 8 KB 8 KB 8 KB 8 KB 8 KB	Step 186 10 0 11 26 16 16 1000 1000	Point 0 2 901 0 22000	×
Romu	est Controller	lefe		1	Object(s)				13	Object(s)	ł
OK	est Controller									NUM	•

Figure 1-14 Selection of [File]-[Option] Menu in File Transfer Window

In the Option window, each parameter has a meaning as described below.

Option			×
Communication	15 ~	Retry Count :	3 ~
Path Excute Path :	C:₩Users₩jachoi₩	Downloads₩N2_UNIHOS	T_1901C
Firmware Path :	 C:₩		
OK			Cancel



OPTION NAME	DESCRIPTION	UNIT
Time Out	Reference of Timeout	sec
Retry Count	Retry Count in Timeout	turn
Execute Path	Folder Location of Execution File	-
Firmware Path	Folder Location of Firmware File	-



1. Execute Path setting must be the folder that FileTransfer.exe exists.



#### 4. VIEW Menu

#### 4.1 Toolbar

When selecting and activating the [View]-[Toolbar] menu, the Toolbar is expanded as shown in Figure 1-16.

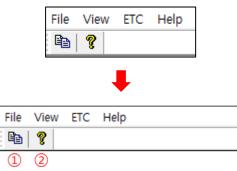


Figure 1-16 Lower Status bar of File Transfer Program

1	Refresh	Refresh the selected File List Window
0	Version	Version Check of File Transfer Program

#### 4.2 Status bar

When selecting and activating the [View]-[Toolbar] menu, current Keyboard status (Caps Lock, Num Lock, Scroll Lock) can be verified as shown in the right lower part of Figure 1-17.

			Controller			
ir C:#N2_JOB		Folder	Ver: 01.00.01-C3			
lame	Size SN 15 KB 100		Name BGTD_JOB BGTJ_JOB BJ7_JOB UT_JOB UJ_JOB UJ_JOL PLOALOFT PLOBLCPAR SY1_PAR SY2_PAR	Size 5 KB 1 KB 1 KB 1 KB 57 KB 4 KB 8 KB 8 KB 8 KB 8 KB 8 KB 8 KB 8 KB 8	Step 186 10 0 11 26 16 1000 1000	Point 0 0 2 901 0
		1 Object(s)			13	Object(s

Figure 1-17 Lower Status bar of File Transfer Program



#### 4.3 Refresh

This enables to refresh the file list in the file list window that was selected by a user. When refreshing the file list window of Controller, a failure can occur. This occurs in case of no communication due to disconnection or error data due to poor communication between PC and Controller. Measures for error are same.

Status Bar Refresh F5 Difr (CMINC_2005 Name Children F5 Name	Size Ste 15 KB 100		Controller Ver: 01.00.01-C3 Name @ GCTD_JOB @ BGTF_JOB @ MASTER_JOB	Size 5 KB 1 KB 1 KB 1 KB	Step 186 10 0 11	Point 0 0 0 2
			\$ ©OUTJOB ©U_01JOB INTEGERGIT PLOAT.GFT PUBLIC.PAR SYU_PAR SYU_PAR SY2_PAR	57 KB 1 KB 4 KB 8 KB 85 KB 8 KB 8 KB 8 KB 8 KB 8 KB	26 16 1000 1000	901 0 2000
		1 Object(s)			13	Object

Figure 1-18 Selection of [View]-[Refresh] in File Transfer Window



#### 5. ETC Menu

#### 5.1 Download Log

\* This function is not currently support.

#### 5.2 Upload Firmware

When the firmware of N2 Controller was modified, it must be updated with the newest firmware version. This menu allows to alter the firmware of Controller. Firmware upload is a very critical work that can affects the operation of Controller and you need to ask our customer support team prior to conducting the firmware upload.

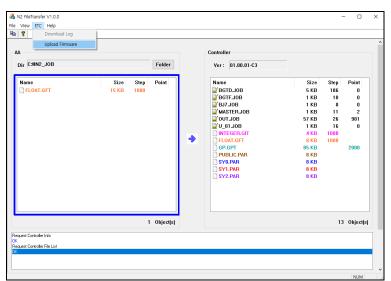


Figure 1-19 Selection of [ETC]-[Upload Firmware] in File Transfer Window

Figure 1-20 shows a screen in the firmware uploading progress.

ir C:#N2_JOB	Folder	Controller Ver : 01.00.01-C3		
Name FLOAT.GFT	Size Step Point 15 KB 1000	Name BGTD_JOB BGTF_JOB BJ7_JOB	5 KB 1 KB 1 KB	Step Point 186 0 10 0 0 0
	Wait for a while until file copy complete New copy (Pirmwar) is Controller (4%)	e		11 2 26 901 16 0 000 2000 2000
	1 Object(s)			13 Object(s

Figure 1-20 Screen in Upload Firmware Progress



Firmware upload is completed if the execution rate of firmware update reaches 100%. When successful firmware update, Log history occurs in the Trace window as below.

Trace window
 Firmware uploading start...
 Firmware upload complete!

When a failure in firmware update, Log history occurs in the Trace window.

Trace window

Unable to open firmware file[C:₩₩ecat]

Error Message as above appears in case that no firmware file (ecat) exists in the defined Firmware Path. Therefore, you need to check Firmware Path setting in [File]-[Option] menu.



#### 6. Help Menu

In selecting [Help]-[About FileTransfer...] menu, you can check the program version as shown in Figure 1-21.

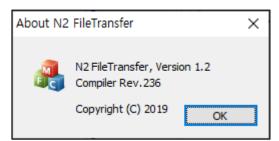


Figure 1-21 Version Information of File Transfer Program



 In case of the first firmware upload, you need to ask out customer support team prior to perform the upload.

- 2) Wrong upload of the firmware may cause a booting failure of Controller.
- 3) Carefully proceed the upload as the procedure.



### Chapter 2 How to Use N2 ROBOSTAR EDITOR

This Robostar Editor allows to create or alter JOB file, POINT variable file and Parameters of N2 Robot Controller.

#### 1. JOB File Editing Screen

Figure 2-1 depicts a screen for JOB Editor and enables to create and edit the JOB files. In addition, it has a built-in compiler so that any Syntax error can be known after completing the JOB program creation.

N2 RobostarEditor V1.0.0 - [MASTER.JOB]	- 🗆 ×
😰 File Edit Compile View Window Help	_ 8 ×
🗅 🖆 🖩 🚭 🗼 🖻 🖻 🗅 오 🎽 🖀 옮 🦀 🔍 🖹 🦽 🌾 🦄	
0 MAIN 1 SVON 2 WHILE 1 3 DLAY 1000 4 VEL 200 5 JMOV PD 6 DLAY 1000 7 JMOV P1 8 DLAY 1000 9 ENDWL 10 EOP	
Ready Ln 5, Col 9	
	, , , , , ,

Figure 2-1 Robostar JOB Editor Screen

1	Ľ	New	New File Creation	2	ų,	Open	JOB File Open	
3	٩C	Save	JOB File Store	4	8	Print	JOB File Print	
5	₿¢	Cut	Cut of Certain Part	6	Ð	Сору	Copy of Certain Part	
7	Ū	Paste	Paste of Copied Part	8	$\Omega$	Undo	Restore to Former State	
9	12	Redo	Execute Again	10	þ4	Find	Search Specific Characters	
11	\$2	Repeat	Search downward from current position	12	<b>3</b>	Find Previous	Search upward from current position	
13	1	Replace	Alter Character String	14	ປ	Find ALL	Search for all JOB files	
15	15	Syntax	Syntax error check	16	∕♦	Bookmark	Bookmark creation	
17	<b>%</b> %		between Bookmarks (before, after)	18	×	Delete all Bookmarks		



#### 1.1 New

A new JOB file is created when pressing the [New] button or selecting [File]-[New] menu. The current Editor version allows only a creation of new JOB file.

#### 1.2 Open

The existing file can be loaded on the Editor as shown in Figure 2-2 when pressing the [Open] button or selecting [File]-[Open] menu.

N2 RobostarEditor V1.0.0						×
File View Help						^
	6 DC 4 6 6 4					
L 🛩 🖬 🔤 🔗 역의 🔊 열기						×
_						^
< -> ~ 수 📙 > 내	PC > 로컬 디스크 (C:) > N2_JOB			ت ٽ ~	N2_JOB 검색	٩
구성 ▼ 새 쫄더						0
CneDrive	이름 ^	수정한 날짜	유형	크기		
H PC	🔐 11.JOB	2019-01-03 오후	JOB 파일	1KB	3	
대 PC 3D 개체	22.JOB	2019-01-03 오후	JOB 파일	1KB	3	
· · · · ·	BGTD.JOB	2019-01-03 오후		5KB	3	
Autodesk 360	BGTF.JOB	2019-01-03 오후	JOB 파일	1KB	3	
👆 다운로드	📓 ВЈ7.ЈОВ	2019-01-03 오후		1KB		
📕 동영상	MASTER.JOB	2019-01-03 오후		1KB		
🗮 문서	OUT.JOB	2019-01-03 오후		58KB		
🔜 바탕 화면	TEMP.JOB	2019-01-04 오전	JOB 파일	1KB	3	
📰 사진						
👌 음악						
📒 로컬 디스크 (C:)						
새 볼륨 (E)						
_ 연구소(₩₩plan)						
🧀 네트워크 🗸						
파일	이름(N):			~	Job Files (*.job)	~
					Job Files (*.job) Point Files (*.job) GP Files (*.gpt) Parameter Files (*.par)	
					Integer Files (*.git) Pallet Files (*.plt) Float Files (*.gft) Driver Files (*.drv) All Files (*.*)	

Figure 2-2 Robostar Editor File Open

#### 1.3 Save

Pressing the **I**[Save] button enables to save the created file. In case of a newly created JOB file, the POINT INFO setting popup window appears as shown in Figure 2-3. Set proper Robot ID(channel) and Robot DOF and enter JOB file name.

dol 🛐	MAIN		
1	SVON VEL 200	POINT INFO	×
2 3 4 5 6 7 8 9	JMOV P0 DLAY 500 JMOV P1 DLAY 500 JMOV P2 DLAY 500 EOP	Robot ID: 0	
1		OK CANCEL	

Figure 2-3 Robostar Editor File Store



#### 1.4 Print

Pressing the Print] button enables to print the currently active file. For example, in the activation of PUBLIC.PAR file as shown in Figure 2-4, only PUBLIC.PAR file is printed once pressing the [Print] button.

N2 RobostarEditor V1.0.0 - PUBLIC.PAR le View Function Window Help								>
I <b>☞ ■ ●</b>   * ʰ ඬ   <u>그</u> ⊂   # # # ¥	AQ 8 4338							
🕼 MASTERJOB	Y	PUBLIC.P	AR					×
0 MAIN 1 SVON		GROUP	ITEM1	ITEM2	ITEM3	DESCRIPTION	MIN	MA
2 WHILE 1		HW_CONF	BGT	ENABLE(0)		Run mode	_	
3 DLAY 1000 4 VEL 200		HW_CONF	BGT	NAME(1)		BGT job name	_	_
5 JMOV PO		HW_CONF	сомм	USED(2)		Communication used		
6 DLAY 1000 7 JMOV P1		HW_CONF	сомм	TYPE(3)		String Command type		
8 DLAY 1000		HW_CONF	сомм	PROTOCOL(4)		RS232 Protocol		
9 ENDWL 10 EOP		HW_CONF	сомм	BAUD(5)		RS232C Baud Rate		
	1	HW_CONF	сомм	DELIMITER(6)		RS232C Delimiter		
		HW_CONF	сомм	ETHERNET PORT1(7)	IP	Ethernet IP address		
		HW_CONF	сомм	ETHERNET PORT1(7)	GATE	Ethernet GATE address		
		HW_CONF	сомм	ETHERNET PORT1(7)		Ethernet monitoring enable		
		HW_CONF	сомм	ETHERNET PORT2(8)	IP	Ethernet IP address		
		HW_CONF	сомм	ETHERNET PORT2(8)	GATE	Ethernet GATE address		
		HW_CONF	сомм	ETHERNET PORT2(8)		Ethernet monitoring enable	_	
		HW_CONF	TP	JOG_DEADMAN(11)		Jog deadman enable		
		HW_CONF	TP	RUN_DEADMAN(12)		Manual run deadman enable		
		HW_CONF	TP	ORG_DEADMAN(13)		Origin deadman enable		
		HW_CONF	TP	OPERATION(14)		Deadman operation mode	_	
		HW_CONF	TP	MODEL(15)		TP model		
		HW_CONF	OPTION	DIO(16)		DIO board count	0	
		HW_CONF	OPTION	TYPE(17)		Fieldbus type		
		HW_CONF	OPTION	ENDIAN(18)		Fieldbus endian		
		HW_CONF	OPTION	IPCONF(19)	IP	Fieldbus IP address	_	
<u>र</u>		HW CONF	OPTION	IPCONF(20)	GATE	Fieldbus GATE address		

Figure 2-4 Example of Robostar Editor File Print

#### 1.5 Cut / Copy / Paste

Selecting the  $\overset{1}{\textcircled{}}$  [Cut] button can cut a certain text string. Selecting the  $\overset{1}{\textcircled{}}$  [Copy] button can copy a certain text string. Selecting the  $\overset{1}{\textcircled{}}$  [Paste] button can paste the text string that was cut or copied.

#### 1.6 Undo / Redo

The  $\Omega$  [Undo] button restores to the former state.

The 🖴 [Redo] button executes again.

#### 1.7 Find / Repeat / Find Previous

The **M**[Find] button allows to find out the specific text string desired from the current file. Enter "JMOV" as a text string that needs to be found and press [Find Next] button as shown in Figure 2-5.



1 2 3 4 5 6 7 8 9	MAIN SVON VEL 200 JMOV P0 DLAY 500 JMOV P1 DLAY 500 JMOV P2 DLAY 500 EOP	Find Find what: UMOV Match whole word only Match case Up  Direction Down	Find Next Cancel
Ì			▼ 

Figure 2-5 Finding a Text String from Current File

You can check that the several "JMOV"s identified became a block-setting as shown in Figure 2-6. Then, you can find the desired text string by pressing the **Figure 1**[Repeat] or **Figure 2**[Find Previous] buttons.

Joł	4	
0 1 2 3 4 5 6 7 8 9	MAIN SVON VEL 200 JMOV P0 DLAY 500 JMOV P1 DLAY 500 JMOV P2 DLAY 500 EOP	4
I		▼ <i>∭</i> {

Figure 2-6 Text String Find Result from Current File

#### 1.8 Replace

Selecting the <sup>M</sup> [Replace] button allows to replace the text string to find in current file with the text string to be replaced as shown in Figure 2-7.

Replace		×
Find what:		Find Next
Replace with:		Replace
Match whole word only	Replace in	Replace All
Match case	C Selection • Whole file	Cancel

Figure 2-7 Text String Find in all JOB files



#### 1.9 Find ALL

The <sup>Q</sup>[Find ALL] button enables to find a desired specific text string from all JOB files that are in the defined path. As shown in Figure 2-8, enter "DLAY" as a desired text string and press [FIND] button.

FIND	×
Find What : DLAY	FIND
	Close

Figure 2-8 Text String Find in all JOB files

As shown in Figure 2-9, you can verify the position of the specific text string in all JOB files through the output list and can open the JOB file by double clicking the list.

III FIND	$\times$
Find What : DLAY	FIND Close
BGTD.JOB(117) : DLAY 100 MASTER.JOB(3) : DLAY 1000	
MASTER.JOB(6): DLAY 1000 MASTER.JOB(8): DLAY 1000 OUT.JOB(20): DLAY 10 TEMPJOB(4): DLAY 500 TEMPJOB(6): DLAY 500	

Figure 2-9 Text String Find Result in all JOB files



#### 1.10 Syntax

After creating a JOB file, you can perform a compile by selecting the [Syntax] button or clicking the [F5] button. Once a compile is succeeded, the popup window with "Compile succeed!" appears as shown in Figure 2-10.

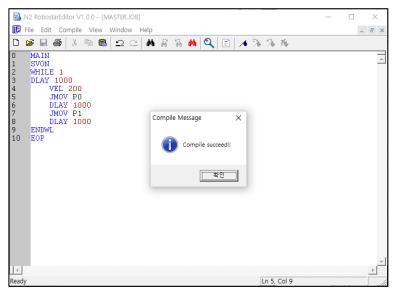


Figure 2-10 Succeeded Compile Screen in JOB file

Figure 2-11 shows a failure in compile. Compile output screen includes the JOB file name and line position that error occurred, Error Message information.

🔯 N	2 RobostarEditor V1.0.0 -	[MASTERJOB]	– 🗆 X
関 Fi	ile Edit Compile Viev	/ Window Help	_ <i>8</i> ×
		฿  Ω ⊆   М & & A   🔍 🖹   🔺 % % %	
0	MAIN SVON	Compile Result	×
3 4 5 6 7 8 9	WHILE 1 DLAY 1000 WEL 200 JMOV P0 DLAY 1000 JMOV P1 DLAY 1000 EOP	file: MASTER ==> line: 10 ERROR ENDWL 가 EOP 앞에 필 file: MASTER ==> line: 10 ERROR EOP 가 필요합니다. file: MASTER ==> line: 10 ERROR Wrong description:	요합니다. ^
			Ŷ
Ready			Close

Figure 2-11 Compile Failure Screen in JOB file



Prior to conducting a compile, the JOB file must be stored in advance.
 Prior to conducting a compile, the JOB file must be stored if there is a change in the JOB file.



#### 1.11 Bookmark

Selecting the <sup>(\*)</sup> [Bookmark] button allows to use Bookmark functions within a JOB file. Pressing the <sup>(\*)</sup> button creates a Bookmark based on the current cursor position. Figure 2-12 and Figure 2-13 show the Bookmark creation when pressing the <sup>(\*)</sup> button.

N2 RobostarEditor V1.0.0 - BGTD.JOB		
File Edit Compile View Window Help		
□ 22 目 28   × № №   コ C   M A 3 M   Q   2   ▲ 3 3 3 M		
BGTD.JOB		
1         0 FF         - 0           2         0 KL_DOT_HIT         0           2         0 KL_DOT_HIT         0           2         0 KL_DOT_HIT         0           3         0 KL_DOT_HIT         0           4         0 KL_DOT_HIT         0           5         NST_FILTER_CUT         1           6         NST_FILTER_CUT         1		
12		
25		• • //
Ready	Ln 178, Col 1	MAC

Figure 2-12 Bookmark Creation 1 in JOB file

N2 RobostarEditor V1.0.0 - BGTD.JOB		
File Edit Compile View Window Help		
🗅 📽 🖩 🚳 오오 🖊 용 용 🖊 🔍 💽 🦽 🧏 🦄		
BGTD JOB		- 0 💌
<pre>144</pre>	Lin 178, Col 1	

Figure 2-13 Bookmark Creation 2 in JOB file

In addition, when pressing 3 button, cursor position moves to upper or lower Bookmark position based on the present cursor position and, when pressing button, all Bookmarks created are deleted.



#### 2. Editing Screen for Common Parameter Setting File

Figure 2-14 indicates a screen for the Common Parameter Setting and enables to edit the Common Parameter used within Controller. Refer to the N2-OM (Operating Manual) for details on the parameters.

_		V1.0.0 - [PUBLIC.PAR]									×
		ion Window Help	4 D	ам Q. E 🗡 🤉	y 102	η£.				-	8
		I I			_				_		1
GROUP	ITEM1	ITEM2	ITEM3	DESCRIPTION	MIN	MAX	UNIT	VALUE1	_	VALUE2	-1'
HW_CONF	COMM	ETHERNET PORT2(8)	<u> </u>	Ethernet monitoring enable			ļ	DIS	-		-11
HW_CONF	TP	JOG_DEADMAN(11)		Jog deadman enable				DIS	-		
HW_CONF	TP	RUN_DEADMAN(12)		Manual run deadman enable				DIS	-		-11
HW_CONF	TP	ORG_DEADMAN(13)		Origin deadman enable				DIS	-		
HW_CONF	TP	OPERATION(14)		Deadman operation mode				MC_OFF	-		1
HW_CONF	TP	MODEL(15)		TP model				TPI9000	-		
HW_CONF	OPTION	DIO(16)		DIO board count	0	2		0			Т
HW_CONF	OPTION	TYPE(17)		Fieldbus type				NONE	-		Т
HW_CONF	V_CONF OPTION ENDIAN(18) F		Fieldbus endian				BIG	-		Т	
HW_CONF	HW_CONF OPTION IPCONF(19) IP		IP	Fieldbus IP address				192.168.1.193			
HW_CONF	OPTION	IPCONF(20)	GATE	Fieldbus GATE address				192.168.1.4			1
HW_CONF	OPTION	TRACKING(21)		Tracking board count	0	2		0			1
HW_CONF	OPTION	SIZE(22)		Fieldbus Data Size	0	4		0			1
HW_CONF	SAFETY	CATEGORY(31)		Safety category type				CAT3_STD	-		1
HW_CONF	ALARM	FAN(35)		Fan alarm enable				DIS	-		1
HW_CONF	ALARM	BUZZER(36)		Buzzer enable				DIS	-		1
HW_CONF	ALARM	BATTERY(37)		Battery alarm enable				DIS	-		1
HW_CONF	XML	NUMBER(38)		Driver number	0	8		1			1
HW_CONF	XML	NAME(39)		Driver name				N2_V10_774111			1
HW_CONF	MB_OVH	VALUE(40)	1	Main board over heat	0	110		85			1
HW_CONF	TMR	TMR1(41)		Timer 1 setting	0	60000		100			1
HW_CONF	TMR	TMR2(41)		Timer 2 setting	0	60000		100			1
ETC	TIME	WTIME(50)	day	Working time day				0			
Ready							1				

Figure 2-14 Editing Screen for Common Parameter Setting File

#### 3. Editing Screen for Robot Parameter Setting File

Figure 2-15 indicates a screen for the Robot Parameter Setting and enables to edit the Robot Parameter used within Controller. Refer to the N2-OM (Operating Manual) for details on the parameters.

File	View Function	Window Help								-	. 6
ا 🛎 ۱	<b>9 6</b>   X 9	A 2 2 3 6	8 R M	9. 8 1 1 3 3 1 1							
GROUP	ITEM1	ITEM2	ITEM3	DESCRIPTION	MIN	MAX	UNIT	VALUE1		VALUE2	1
CONF	RENB	ENABLE(100)		Robot enable				ENB	•		
CONF	USAX	1_axis(101)		1_axis driver ID	0	6		0			
CONF	USAX	2_axis(101)		2_axis driver ID	0	6		0			
CONF	USAX	3_axis(101)		3_axis driver ID	0	6		3			
CONF	USAX	4_axis(101)		4_axis driver ID	0	6		0			
CONF	USAX	5_axis(101)		5_axis driver ID	0	6		0			
CONF	USAX	6_axis(101)		6_axis driver ID	0	6		0			
CONF	XENB	1_axis(102)		Robot axis1 enable				DIS	-		
CONF	XENB	2_axis(102)		Robot axis2 enable				DIS	-		
CONF	XENB	3_axis(102)		Robot axis3 enable				ENB	*		
CONF	XENB	4_axis(102)		Robot axis4 enable				DIS	-		
CONF	XENB	5_axis(102)		Robot axis5 enable				DIS	•		
CONF	XENB	6_axis(102)		Robot axis6 enable				DIS	-		
CONF	ROBOT SPEC	(105)		Robot spec				VAR			
CONF	DOF	(106)		Degree of freedom				6			
CONF	Pos Axis	(107)		The number of dimensions				3			
CONF	Ori Axis	(108)		The number of orientations				3			
CONF	Ext DOF	(109)		Degree of freedom for external axis				0			
CONF	ROBOT NAME	(110)		Robot name				NONE			
BODY	RANGE	SW LIMIT(125)	1_axis	1_axis Software limit	-999999.000	999999.000		-170.000		170.000	
BODY	RANGE	SW LIMIT(125)	2_axis	2_axis Software limit	-999999.000	999999.000		-80.000		110.000	
BODY	RANGE	SW LIMIT(125)	3_axis	3_axis Software limit	-999999.000	999999.000		-500.000		500.000	_
BODY	RANGE	SW LIMIT(125)	4 axis	4 axis Software limit	-999999.000	999999.000		-190.000		190.000	

Figure 2-15 Editing Screen for Robot Parameter Setting File



#### 4. Editing Screen for POINT File

Figure 2-16 is Point Editor screen and it enables to create and edit the Global Point file that is used within Controller. Each Point can define 8 axes with Robot postures (R\_CONF) and it is possible to set a tool attached to Robot, corresponding coordinate system (TOOL) and user coordinate system (USER).

	w Edit Wind		2 4 8 5	AQ	a 🔺 %	2 16					
	1	2	3	4	5	6	7	8	R_CONF	TOOL	USER
GP00000									NO_FORM	-	
GP00001										•	
GP00002										•	
GP00003									NO_FORM	•	
GP00004										•	
GP00005										-	
GP00006										•	
GP00007										•	
GP00008									NO_FORM	•	
GP00009										•	
GP00010										•	
GP00011										•	
GP00012										•	
GP00013										•	
GP00014										-	
GP00015									NO_FORM	•	
GP00016										•	
GP00017									NO_FORM	•	
GP00018										•	
GP00019										-	
GP00020										•	
GP00021										•	
GP00022									NO_FORM	•	
GP00023									NO FORM	•	

Figure 2-16 POINT File Editing Screen



#### 4.1 Initialize

Figure 2-17 indicates a tab that can perform an initialization on the using Point in the beginning of Point editing. Point range is set via Start Point and End Point. An initialization setting is available for individual axis and entire axes.

6	7	8	R_CONF	TOOL	USER	^	=	
			NO_FORM	•				Initialize point data
			NO_FORM	-				
				-		- 1	U	1: 0 (2) apply
			NO_FORM	•				2: 0 apply
				•				3: 0 apply
				-				4: 0 apply
				-				
				-				5: 0 apply
				•				6: 0 apply
				•				7: 0 apply
				-				8: 0 apply
				•				
				•				9: 0 apply
			NO_FORM	-				10: 0 apply
				-				11: 0 apply
				•				12: 0 apply
				•				(3) (4
			NO_FORM	•				Start Point : 0 End Point : 199
				-				
			NO_FORM	•				5 All apply
			NO_FORM	-				

Figure 2-17 Initialize Tab in POINT File Editing Screen

■ Detail Description on Initialize Setting Tab

(1	Initial Position Setting(Angle) for Axis 1	2	Separately applying Initial Position value of Axis 1
3	Start Point Setting value	4	End Point Setting value
(5	Entirely applying Initial Position value of	Axis	1~8

When pressing "All Apply" button, a user is asked once more on proceeding the initialization via Message Box as shown in Figure 2-18.

RobostarEditor	×
Initialize 0 - 1999 point d Are you OK??	ata!!
확인 취	\$

Figure 2-18 Popup Window for verifying "All Apply" Initialization



Figure 2-19 is a screen that the initialization was completed.

l 🚅 🖬	@ X R	0.0	MAN	MQE	1 14 74 73	16								
	1	2	3	4	5	6	7	8	R_CONF	TOOL	USER	<u>^</u>		
GP00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	-			Initialize point data	
GP00001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	-				
GP00002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	*			1: 0	apply
GP00003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	*			2: 0	apply
GP00004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	-			3: 0	apply
GP00005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	*			4: 0	
GP00006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	-				apply
GP00007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	*			5: 0	apply
GP00008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	-			6: 0	apply
GP00009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	*			7: 0	apply
GP00010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	-			8: 0	apply
GP00011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	*				
GP00012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	-			9:0	apply
GP00013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	*			10: 0	apply
GP00014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	•			11: 0	apply
GP00015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	*			12: 0	acoly
GP00016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	•				079-7
GP00017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	*			Start Point : 0	End Point : 1999
GP00018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	•				
GP00019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	*				All apply
GP00020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	-				
GP00021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	*			Coordinate Parame	ter Increase Initialize
GP00022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	•				
GP00023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO_FORM	*				
GP00024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NO FORM	*		~		

Figure 2-19 POINT File Editing Screen after Initialization



#### 4.2 Increase

Figure 2-20 shows an editing tab that can increase the Point in certain amount as defined by a user within the set range when editing the Point. Point range setting can be set via Start Point and End Point. A certain Point value can be raised for individual axis and entire axes.

6	7	8	R_CONF		TOOL USER ^	= = = = = = = = = = = = = = = = = = =
0.0000	0.0000	0.0000	NO_FORM	•		Initialize point data
0.0000	0.0000	0.0000	NO_FORM	٠		
0.0000	0.0000	0.0000	NO_FORM	٠		(①,3: 0 (2),Jappely
0.0000	0.0000	0.0000	NO_FORM	•		2: 0 apply
0.0000	0.0000	0.0000	NO_FORM	•		3: 0 apply
0.0000	0.0000	0.0000	NO_FORM	٠		4: 0 apply
0.0000	0.0000	0.0000	NO_FORM	٠		
0.0000	0.0000	0.0000	NO_FORM	۳		5: 0 apply
0.0000	0.0000	0.0000	NO_FORM	٠		6: 0 apply
0.0000	0.0000	0.0000	NO_FORM	•		7: 0 apply
0.0000	0.0000	0.0000	NO_FORM	•		8: 0 apply
0.0000	0.0000	0.0000	NO_FORM	٠		
0.0000	0.0000	0.0000	NO_FORM	٠		9: 0 apply
0.0000	0.0000	0.0000	NO_FORM	٣		10: 0 apply
0.0000	0.0000	0.0000	NO_FORM	•		11: 0 apply
0.0000	0.0000	0.0000	NO_FORM	٠		12: 0 apply
0.0000	0.0000	0.0000	NO_FORM	٠		3+ <u>4</u> +
0.0000	0.0000	0.0000	NO_FORM	۳		Start Point : 0 End Point : 1999
0.0000	0.0000	0.0000	NO_FORM	٠		
0.0000	0.0000	0.0000	NO_FORM	•		5 d Al apply
0.0000	0.0000	0.0000	NO_FORM	٠		
0.0000	0.0000	0.0000	NO_FORM	•		Coordinate Parameter Increase Initialize

Figure 2-20 Increase Tab in POINT File Editing Screen

Detail Description on Increase Setting Tab

1	Increased Position Setting(Angle) for Axis 1	2	Separately applying Increased Position value of Axis 1			
3	Start Point Setting value	4	End Point Setting value			
5	Entirely applying Initial Position value of Axis 1~8					

Figure 2-21 is a screen that shows increased position values for each axis; -2.098 for axis 1, 4.483 for axis 2, 32.687 for axis 3, -91.268 for axis 4, -91.671, 6 for axis 5, 52.813 for axis 6.



Elle Vi	ew <u>E</u> dit <u>W</u> in		las or io	400	1 1 1 2 3	- M							- 6
		2 B	: M A A 3	4 Q E	5	6	7	8	R CONF	то	DL USER ^	11	
	-2.0980	4 4830	32 6870	-91,2680	-91.6710	52.8130	0.0000	0.0000	NO FORM		JL USER		-
GP00000										•		Increase point data	
GP00001	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	•	_	1: -2.098	apply
GP00002	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	•			
GP00003	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	-		2: 4.483	apply
GP00004	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM			3: 32.687	apply
GP00005	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	-	_	4: -91.268	apply
GP00006	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	-		5: -91.671	apply
GP00007	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	-			
GP00008	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	-		6: 52.813	apply
GP00009	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	•		7: 0	apply
GP00010	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	-		8: 0	apply
GP00011	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	•			
GP00012	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	-		9:0	apply
GP00013	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	-		10: 0	apply
GP00014	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	•		11: 0	apply
GP00015	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	•		12: 0	apply
GP00016	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	•			
GP00017	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	*		Start Point : 0	End Point : 1999
GP00018	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	•			
GP00019	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	•			All apply
GP00020	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	-			
GP00021	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	•		Coordinate Paramet	er Increase Initialize
SP00022	-2.0980	4.4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO_FORM	-			and case and care
3P00023	-2.0980	4 4830	32.6870	-91.2680	-91.6710	52.8130	0.0000	0.0000	NO FORM	-			

Figure 2-21 POINT File Editing Screen after Proceeding Increase

#### 4.3 Parameter

\* This function is not currently supported.

#### 4.4 Coordinate

\* This function is not currently supported.



#### 5. Editing Screen for Variable File

Figure 2-22 is the Editor screen for Variables and allows to edit the FLOAT and INTEGER variables that are used in Controller.

	B N2 RobostarEditor V1.0.0 - INTEGER.GIT − □ ×								×
-	ile View Edit				-			C1. Y	7. w.C.
	) 🖻 🖥 🚭		2 6	14) 	ĥ	3 A M	थ 🗉 🗡	<b>%</b> 5	* *
									×
	INDEX	VALUE	^			INDEX	VALUE		^
	F000	9999.999000				1000	)	130	
	F001	9999999.000000				1001		10	
Ш	F002	-9999999.000000				1002	2	32760	
Ш	F003	-9999.999000				1003	3	0	
Ш	F004	0.123456				1004	ł	0	
Ш	F005	0.000000				1005	5	0	
	F006	0.000000				1006	5	0	
Ш	F007	0.000000				1007	,	0	
	F008	0.000000			Г	1008	3	0	
Ш	F009	0.000000				1009	)	0	
Ш	F010	0.000000				1010	)	0	
	F011	0.000000				1011		0	
	F012	0.000000				1012	2	0	
	F013	0.000000				1013	;	0	
	F014	0.000000	~			1014		0	~
Re	eady		_					==	=== /

Figure 2-22 Editing Screen for Variable File



## Chapter 3 Revision

Revision	Date	Revision Detail					
1	2019-01-07	Initial Distribution					
2	2020-05-07	Added T/P parameter setting when performing FileTransfer Connect					



### A. Literature Reference

All the literature, which are required for performing services, repair or installation of all robot system that uses this product, are specified in this chapter.

In the ID of all literature, the very first word indicates the Controller name and the second word means the abbreviation of corresponding literature. The last indicates language and its version.

Language is marked according to the rules below.

- Korean: K
- English: E
- Chinese: C
- Japanese: J
- Vietnam: V

Document ID	Description
N2-IM-E01	<b>Installation and handling manual</b> This explains the Controller structure and installation as well as the methods to interface with external devices.
N2-OM-E02	<b>Operation manual</b> This explains the method to use the Controller and Teach Pendant, parameter setting, JOB program editing and additional functions.
N2-PM-E04	<b>Programming manual</b> This explains the method to create RRL (Robostar robot language) that is the Robostar Robot program and describes the commands.
N2-HM-E02	<b>Unihost manual</b> This explains about Unihost that is Robostar on-line PC program.
N2-AM-E02	Alarm and maintenance manual This explains the information on problems occurred in the Controller- based Robot system as well as solutions and procedure for the problems.

## B. Hazard Stages & Signs

Sign	Designation	Meaning
	DANGER	This warns that deadly and serious injuries or serious product damages can be caused from the accidents unless complying the guidelines.
	WARNING	This warns that accidents may occur unless complying the guidelines and it leads to deadly and serious injuries or serious product damages can be caused from the accidents.
	CAUTION	This warns that accidents may occur unless complying the guidelines and it leads to serious product damages can be caused from the accidents.
	ELECTRICAL SHOCK	This sign indicates a hazard on electric shock which may lead to serious or deadly injuries.
i	NOTE	This sign notices important facts and conditions.
$\bigcirc$	PROHIBITION	This sign notices the prohibitions for normal operation.

N2 Series Controller

UNI-HOST Manual Second edition, May 07, 2020

> ROBOSTAR CO., LTD. ROBOT R&D CENTER

