Chapter 1. Introduction

1.1. Characteristics of GMWIN

GMWIN is a programming and debugging tool for the full range of GLOFA PLC. GMWIN software has the following features.

1) Comfortable Interface

It is possible to compile and debug several programs at the same time and maximizes user's other convenience.

2) Supporting Various Languages

It supports various languages like LD, SFC, IL. So you can select and use applicable language to a system.



3) Using Variables by Symbol

You can create a program using symbols for easy understanding and memory address is also assigned automatically. It supports various data types. So you can create high-leveled programs.

variable Kind		Cancel
/ariable Kind :	VAR	Help
Data Type		Memory Allocation
 Elementary : 	BOOL	• Auto
🔿 FB Instance :	BOOL BYTE	C Assign (AT) :
C Array (0) OF DWORD	
nitial Value		
		Init. Array

4) PLC System using Project Unit

It is very easy to create and test a program because you can include several programs in one PLC system.

🔁 c:\gmwin\source\enginelines.prj	_ 🗆 ×
🏱 PROJECT ==> PLC Type : GM1 Writer : Tom Smith	
CONFIGURATION(PLC) ==> Configuration Name : UNNAMED	
CONFIGURATION GLOBALS ==> 3 variables declared	
ACCESS VARIABLES ==> 2 variables declared	
RESOURCE(CPU) 0 ==> Name : RESO	
RESURCE GLUBALS ==> U variables declared	
IASK DEFINITIONS ==> 3 tasks defined	
- [LL] PROGRAM ==> WELDING : C:\gmwin\source\robot2 src	
SFC PROGRAM ==> INST2 : c:\gmwin\Source\robot3.src	
LD PROGRAM ==> INST3 with task H INIT : c:\qmwin\source\robot4.src	
COMMENTS for DIRECT VARIABLES ==> 6 variables declared	
- PARAMETERS	
-BASIC PARAMETERS	
I/O PARAMETERS	
LINK PARAMETERS	
LIBRARIES	
C:\gmwin\lib\communi.lfb	
C:\gmwin\lib\remote3.lfb	
C:\gmwin\lib\remote4.1D	
-e c:/gmwin/iib/special.icb	
INCLUDED LIBRARIES Image: C:\gnwin\lib\communi.lfb Image: C:\gnwin\lib\remote3.lfb Image: C:\gnwin\lib\remote4.lfb Image: C:\gnwin\lib\special.lfb	

5) Connecting GMWIN to PLC by Easy Network

You can download and monitor programs not only in directly connected PLC but also in a local PLC connected by network.

6) Various PLC Information

It is available to monitor various PLC states and to use this function in the program mode.

7) User-Defined Libraries

Besides standard functions and function blocks, you can define a frequently used program as one of functions or function blocks for your convenience.

1.2. How to Connect GMWIN to PLC

In connection GMWIN to PLC, you must previously define two options – ^rMethod of Connection <u>a</u> and ^rDepth of Connection <u>a</u> in Connect Option.

There are four kinds of methods of connection, using RS-232C, MODEM, Communication module (GLOFA Fnet/Mnet for PC) and Network (Ethernet), and three kinds of depth of connections such as Local, Remote 1 and remote 2. When using Windows 3.x for operating system, the connections using Communication module and Network are not supported.

Select **Connect option** in **Project - Option** menu.

1.2.1. Method of Connection

1) Connection using RS-232C

To use RS-232C connection, connect the RS-232C cable with the serial port in PC and serial port in PLC From the Project Menu, choose **Option**.

Option			?
Make Option Monitor/Debug Option	Auto Save Direc	ctory Set Connect	Option
Method of Connection			
• R8-232C			
C Modem Comm	unication Port	COM1	•
GLOFA Fnet for PC			
O GLOFA Mnet for PC			
O Ethernet			
Depth of Connection			
● Local			
O Remote 1			
O Remote 2			
	OK	Cancel	Help

Choose Connect Option tab in the Option dialog box.

Select *RS-232C* in Method of Connection. Select Communication Port. Select *Depth of Connection* and click *OK* button.

Local Connection

Select *Local* in Depth of Connection and click *OK* button. Choose *Connect* from the Online Menu **Remote Connection** (See GLOFA Fnet/Mnet user's manual for more details), Open Network Type List and select a network type.

Type a station number in Station No. Box.

Select slot number.

Click *OK* button.

Choose *Connect* from the Online Menu.



2) Connection using Modem

The long distance connection using modem is only available by Remote Connection. To be connected with PLC, the computer link board(G L - CUEA) must be mounted on the computer.

From the Project Menu, choose *Option*. Select *Connect Option* in *Option*.

Option			? X			
Make Option Monitor/Debug Option Auto Save Directory Set Connect Option						
Method of Connection						
© RS-232C						
Modem	Communication Port	COM2				
C GLOFA Fnet for PC	BPS	110 💌				
C GLOFA Mnet for PC	Phone No	909-123-4567				
C Ethernet	i none no.					
Depth of Connection Setting of Network GLOFA GLOFA	of Remote 1					
	OK	Cancel Help				

Select *Modem* in Method of Connection.

Select Dial-Up Modem or Dedicate Modem.

Setup *Communication Port(COM1 COM4), BPS and Phone No.* Click *OK* button. 3) Connection using Communication Module

To use Communication module connection (GLOFA Fnet for PC or GLOFA Mnet for PC), Fnet(Fieldbus) or Mnet(Mini-MAP) module for PLC and boards for PC.

After installing communication board for PC in PC, you must setup the address to be used by communication module for PC with changing config.sys file in Windows folder of PC (See GLOFA Fnet/Mnet user's manual for detail comment). Example) device = c:\windows\emm386.exe noems x=d000-d4000

From the Project Menu, choose *Option*. Select *Connect Option* in *Option*.

tion Make Option Monitor/Det	oug Option Auto Save Di	rectory Set Connect	? Option
Method of Connection	· · · ·		
C RS-232C C Modem	Port Address	0x200	•
GLOFA Fnet for PC	Memory Address	0xC000	•
C GLOFA Mnet for PC			
C Ethernet			
Depth of Connection Sett Netw Remote 1 Remote 2	ing of Remote 1 vork Type Station N OFA Fnet	lo. 0	
	ОК	Cancel	Help

Select *GLOFA Fnet for PC* or *GLOFA Mnet for PC* in Method of Connection. Setup *Port Address* and *Memory Address*.

Remote Connection (See GLOFA Fnet/Mnet user's manual for detail comment information) Select Station No.

Select *Online-Connection* in menu and click *OK* button. Choose *Connect* from the Online Menu.

Port Address and Memory Address must be identified with the ones set in the communication board mounted on PC.

4) Connection using Network

Network connection is only available for Remote connection. To use this connection, Enet(Ethernet) module and the network system must be installed.

From the Project Menu, choose *Option*. Select *Connect Option* in *Option*.

Option	? ×
Make Option Monitor/Debug Option Auto Save Directory Set Connect Option	
Method of Connection C RS-232C C Modem C GLOFA Fnet for PC C GLOFA Mnet for PC Ethernet	
Depth of Connection Setting of Remote 1 Network Type IP address: Remote 1 GLOFA Enet Remote 2	
OK Cancel	Help

Select Ethernet in Method of Connection.

Remote Connection (See GLOFA Fnet/Mnet user's manual for more detail information)

Setup IP address.

Click OK button.

Choose Connect from the Online Menu.

1.2.2. Depth of Connection

1) Local Connection

From the Project Menu, choose *Option*. Select *Connect Option* in *Option*. Select *Local* in Depth of Connection.

Opt	on			? ×			
	Make Option Monitor/Debug Option Auto Save Directory Set Connect Option						
	Method of Connection						
	 RS-232C 	O annumication Dark					
	O Modem	Communication Port	T COM2				
	GLOFA Fnet for PC						
	GLOFA Mnet for PC						
	C Ethernet						
	- Depth of Connection						
	 Local 						
	O Remote 1						
	C Remote 2			1			
				J.			
		ОК	Cancel	Help			

Click OK button.

Choose *Connect* from the Online Menu.



2) Remote 1 Connection

From the Project Menu, choose *Option*. Select *Connect Option* in *Option*. Select *Remote 1* in Depth of Connection.

Option	? ×
Make Option Monitor/Debug Option Auto Save Directory Se	t Connect Option
Method of Connection	
• RS-232C	
C Modem Communication Port COM2	
C GLOFA Fnet for PC	
O GLOFA Mnet for PC	
C Ethernet	
Depth of Connection Setting of Remote 1 C Local Network Type Station No.	
Remote 1 GLOFA Fnet Slot O	01 02 03
C Remote 2	5 06 07
ОК	Cancel Help

Select *Network Type* and *Slot* in Depth of Connection.

Select *Station No.* (only available in GLOFA Fnet, Fdnet and Mnet) or IP address(GLOFA-Enet). decimal or hexadecimal numbers are all available for *Station No*.

Click OK button.

3) Remote 2 Connection

From the Project Menu, choose *Option*. Select *Connect Option* in *Option*. Select *Remote 2* in Depth of Connection.

Option ? 🗙							
Make Option Monitor/Debug Option Auto Save Directory Set Connect Option							
	Method of Connection						
C Modem Communication Port COM2					<u> </u>		
	O GLOFA Fnet fo	ir PC					
	O GLOFA Mnet fo	or PC					
	C Ethernet						
Depth of Connection							
	O Local	Network Type	Station No.	0			
	🔿 Remote 1	GLOFA Fnet	Slot 💿 (01 0	2 0 3		
					6 0 7		
		– Setting of Remote	2				
14		Network Type	Station No.	0			
	OK Cancel Help						

Setup Remote 1 Box

Select *Network Type* in Depth of Connection.

Select Slot and Station No.

Decimal and hexadecimal numbers are all available for the Station No.

Setup Remote 2 Box

Select Network Type in Depth of Connection.

Select Slot and Station No.

Decimal and hexadecimal numbers are all available for the Station No. Click *OK* button.

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