

Connecting Rockwell (Allen-Bradley) PLC

MicroLogix 1200/1500 Series Serial

Communication Setting Sample

MicroLogix 1200/1500 Series

GP Sett	ings	PLC Settings				
Speed	19200bps	Baud Rate	19200bps			
Data Length 8bits		-	-			
Stop Bit	1bit	-	-			
Parity	Even	Parity	Even			
Flow Control	ER (DTR/CTS)	-	-			
SIO Type	RS-232C	-	-			
DH Address GP	0 to 254	Node Address	0 to 254			
DH Address PLC*1						
SIO Type	RS-232C	-	-			
-	-	Driver	DF1 Half Duplex			
			Slave			
-	-	Control Line	No Handshaking			
-	-	Error Detection	BCC			
-	-	EOT Suppression	Not Checked			
-	-	Duplicate Packed	Not Checked			
		Detect				
-	-	Poll Timeout	3000			
-	-	Message Retries	3			
-	-	Pre Transmit	0			
		Delay				

*1 Set with same address for [DH Address GP] and [DH Address PLC]



Communication Settings [PLC]

Two programs are required for MicroLogix PLC communication settings.

- 1. RSLinx Software to connect PLC and PC with RSLogix500 installed (Ver.2.41.00 is used in this sample.)
- 2. RSLogix500 Ladder Software

(Ver.5.20.00 is used in this sample.)

- * Communication Settings on RSLogix500 Please connect PLC and PC with RSLinx before creating a ladder. (Contact Rockwell Automation, Inc. for more details.)
- 1) Start up RSLogix500.
- 2) Select the CPU type

Select Processor 1	уре							<u>×</u>
Pr	ocessor Name:	UNTITLED						ОК
1747-L552B	5/05 CP	U – 32K	Mem. Mem	0S501	Series	C	<u> </u>	Cancel
1747-L553 1747-L553	5/05 CP	J - 64K J - 32K	Mem.	OS501	JEFTES	0		Help
1747-I551 1747-I553 1747-I552 1747-I551 1747-I543C 1747-I542C 1747-I541C 1747-I543 1747-I542B 1747-I541	5/05 CP 5/05 CP 5/05 CP 5/04 CP 5/04 CP 5/04 CP 5/04 CP 5/04 CP 5/04 CP	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	Mem. Mem. Mem. Mem. Mem. Mem. Mem. Mem.	OS501 OS500 OS500 OS500 OS401 OS401 OS401 OS401 OS401 OS401 OS401	Series Series Series	ссс	<u> </u>	
Communication se Driver	ettings Proce	ssor Node:			Re	ply Timeout:		
AB_DF1-1	- 1	Decimal (= Octal)	1	/ho Active		0 (Se	c.)	

Communication Settings can be left by default.



3) Click [Channel Configuration] .



4) A dialog box will appear. Then double-click the [Channel 0] tab and set the channel.

Channel Configuration				×
General Channel 0				1
Driver DF1 Half Duplex Baud 19200 Parity EVEN	Slave Node	Address (decimal)		
Protocol Control				
Control Line No Handshak	ng	<u> </u>	Poll Timeout (x20	1 ms) 3000
Error Detection BCC F EO F Du	T Suppression plicate Packet Detect	<u> </u>	Message Re	tries 3
		Pre T	ransmit Delay (x1	ms) 0
	ОК	Cancel	Apply	Help



Setting Item	Setting Detail	Remark
Baud Rate	19200bps	
Parity	Even	
Communication	DF1 Half-Duplex	
Driver		
Duplicate Packet	Disable	System cannot be operated with other
Detection		settings.
Error Detection	BCC	System cannot be operated with other
		settings.
Control Line	No Hand shaking	System cannot be operated with other
		settings.
Station Address	0 to 255	Set with the same address as DH GP Address of GP

* Other settings can be left by default.

Click the [OK] button after complete the settings.

Download the driver settings. Click [OFFLINE] and select [Download...].





The dialog box as below will be displayed, and then click the [OK] button.

Revision Note	×
Do not prompt me for revision notes again. Path: C:\WORKING FOLDER\TEST.RSS	OK
Revision Note Version: 0	Cancel
File PLC Information Processor Name : UNTITLED Station # : 1d	
Processor Type : Bul. 1764 Micrologix 1500 LSP Series C	

The following alert dialog box will appear, and then click [Yes].

RSLogix :	500	\geq
⚠	Downloading Program (UNTITLED) for Bul.1764 Micrologix 1500 LSP Series To (UNTITLED) Bul.1764 Micrologix 1500 LSP Series C Driver:AB_DF1-1 at Node:1	; C
	Are you sure you want to proceed with Download?	

The below dialog box warning "Loss of communication on CURRENT channel (CH0) will occur." will be displayed, and then click [Apply].



The port settings for MicroLogix 1200/1500 are completed.



Note)

When redownloading a project, please be noted that you may not be able to download it because 0 Channel of PLC has been changed to the port settings to communicate to GP.

In case to redownload it, open the cover on MicroLogix 1200/1500 and press the communication toggle push button. After pressing the button, the communication settings of the RS-232C port on the Base Unit will be the default settings.

Confirm that PLC is recognized on RSLINX before redownloading.

Setting Item	Setting Detail
Protocol	DF1 Full-Duplex
Baud Rate	19,200 bps
Parity	none
Stop Bits	1bit
Node Address	1
Control Line	No Hand shaking
Error Detection	CRC
Embedded Responses	auto detect
Duplicate Packet Detect	enable
ACK Timeout	50 Counts
NAK Retries	3 retries
ENQ Retries	3 retries

Default Communication Settings of RS-232C Port on Base Unit



Assigning Devices

With Rockwell PLC, the required arrays and number of elements are assigned on RSLogix500. If you connect it to GP/GLC without assigning here, a host communication error will occur.



[File Type]



The project file has array types and array numbers as left.



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R6 - CONTROL

23	Data	File N7 (de	:) INTEG	ER		8					-D×	
Of	fset	C	1	2	3	4	5	6	7	8	9	
N7	2:0	<u> </u>										
												Ì
												i
4											ЪЕ	
		N7:0							Radi	_{X:} Decima	· _	
SJ	ymbol:									Colum	ns: 10 💌	
D	esc:											
N7		- -	Prop	oerties		<u>U</u> sa	ge		Hel	P		

Only one element exists by default. Because N array to which the system start address is assigned needs 20 elements, it is necessary to increase elements.

To increase these elements, start setting as left.





📳 Data File N	17 (dec)	INTEGE	8							<u>-101 ×</u>	
Offset	0	1	2	3	4	5	6	7	8	9	
N7:150	0	0	0	0	0	0	0	0	0	0 🔺	
N7:160	0	0	0	0	0	0	0	0	0	0	
N7:170	0	0	0	0	0	0	0	0	0	0	
N7:180	0	0	0	0	0	0	0	0	0	0	
N7:190	0	0	0	0	0	0	0	0	0	0	
N7:200	0	0	0	0	0	0	0	0	0	0	
N7:210	0	0	0	0	0	0	0	0	0	0 I	
N7:220	0	0	0	0	0	0	0	0	0	0	
N7:230	0	0	0	0	0	0	0	0	0	0	
N7:240	0	0	0	0	0	0	0	0	0	0	
N7:250	0	0	0	0	0					÷	
, 										ĿĒ	
N7:25	54							Radi	x Decima	- I	
Symbol:	Symbol: Columns: 10 -										
Desc:	Desc:										
N7 Properties Usage Help											

As you can see left, 255 elements have been created in N7.

[Creating New Array]

It is possible to create multiple arrays with Rockwell PLC.

e.g.)





To start creating new arrays, follow as left.





Following this way, create arrays and elements towards each array type.

Duplication of array numbers following array type is not allowed. For example, you cannot create such as N15, B15.