

# Connecting Rockwell (Allen-Bradley) PLC

## Controllogix 5000 Series - DF1 Serial

## Communication Setting Sample

GP Settings		PLC S	ettings
Speed	19200 bps	Baud Rate *1	19200 bps
Data Length	8 bit	Data Bits <sup>*1</sup>	8 bit
Stop Bit	1 bit	Stop Bit <sup>*1</sup>	1 bit
Parity	Even	Parity <sup>*1</sup>	Even
Flow Control	ER (DTR/CTS)		
SIO Type	RS-232C		
Machine No.	0	Station Address *2	0
		Mode *1	System
		Control Line *1	No Handshake
		RTS Send Delay *1	0
		RTS Off Delay *1	0
		Protocol *2	DF1 Slave
		Transmit Retries *2	3
		Slave Poll Timeout	3000
		*2	
		EOT Suppression *2	Not Checked
		Error Detection *2	BCC
		Enable Duplicate	Not Checked
		Detection *2	(Disable )

\*1 Set in the [Serial Port] menu of the ladder software RSLogix5000 by Rockwell.

\*2 Set in the [System Protocol] menu of the ladder software RSLogix5000 by Rockwell.



## Communication Settings [PLC]

Two programs are required for Controllogix PLC communication settings.

- 1. RSLinx Software to connect PLC and PC with RSLogix5000 installed (Ver.2.41.00 is used in this sample.)
- 2. RSLogix5000 Ladder Software (Ver.7.00.00 is used in this sample.)
  - \* Communication Settings on RSLogix5000

Please connect PLC and PC with RSLinx before creating a ladder. (Contact Rockwell Automation, Inc. for more details.)

#### 1) Start up RSLogix5000.

If it is a new project, select [File] --> [New...] and set the CPU type.

New Controller		<u>×</u>
Vendor:	Allen-Bradley	
Туре:	1756-L55/A ControlLogix 5555 Controller 👻	ОК
Name:	1756-L1 ControlLogix 5550 Controller	Cancel
Description:	1756-L55/A       ControlLogix 5555 Controller         1769-L20       CompactLogix 5320 Controller         1789-L60/A       SoftLogix 5860 Controller	Help
Chassis Type:	1756-A10 10-Slot ControlLogix Chassis	
Slot: Create In:	C:\RSLogix 5000\Projects	Browse



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Pat		
Te at Tanana Character Properties	Alt∓Enter	
Controller Propertie	m n ut	
Trends Data Types User-Defined Hodule-Defined	1	
I/O Configuration	B	
dit properties for selected c	니 [] omponent	-f

# If it is an existing project, select [Edit] --> [Properties].

The [Controller Properties] window will appear.



2) Select the [Serial Port] tab and set as below.

Minor Faults General S	Date/Timerial Port*	e   Systen	Advanced n Protocol	1	SFC E: User Prot	kecution ocol	) Major	File Faults
Mode:	System	Ī				Show Offi	na Valu	885
Baud Rate:	19200	Ĩ						
Data Bits:	8	Ī						
Parity:	Even _	Ī						
Stop Bits:	1	ŀ						
Control Line:	No Handsha	ake vs:Caura	I			$\mathcal{F}$		
RTS Send Delay:	0	(x20 ms)						
RTS Off Delay:	0	(x20 ms)						

Mode:	System
Baud Rate:	19200 bps
Data Bits:	8 bit
Parity:	Even
Stop Bit:	1 bit
Control Line:	No Handshake
RTS Send Delay:	0
RTS Off Delay:	0



3) Select the [System Protocol] tab and set the communication settings as below.

Minor Faults   General   Seria	Date/Time Advance al Port* System Protoco	ed SFC Execution   User Protocol   Majo	File or Faults
Protocol: Station Address:	DF1 Slave	Error Detection で BCC で CRC	
Transmit Retries:	13 	T Enable Duplicate Detectio	n
Slave Poll Timeout:	3000 (x20 ms) I <sup>™</sup> EOT Suppression		

Protocol:	DF1 Slave
Station Address:	0
Transmit Retries:	3
Slave Poll Timeout:	3000
EOT Suppression:	Not Checked
Error Detection:	BCC



4) Download the serial port communication settings.

Select [Communications] --> [Download] to download the communication settings.



The PLC communication settings are here completed. Please confirm that CPU is recognized on RSLogix before downloading the project.

🕘 🖳 Workstation, PFD	Go Online
응 ය AB_DF1-1, DF1	Upload
⊕	Download
[9] 192.168.0.1, 1756-ENE 1/8, 1756-ENE 1/8 (20) Sackplane, 1756-A4/A (20) 1756-L1/A LOGIX5550, ControllogixEther test	Recent
01, 1756-ENET/B	Apply
	Close
	Help
urrent Path: AB_DF1-1	

(Screen of RSLinx / Who Active )



## **Assigning Devices**

With Rockwell PLC, the required arrays and number of elements are assigned on RSLogix5000. If you connect it with GP/GLC without assigning here, a host communication error will occur.

Select [Logic] to create arrays and the number of elements.

👫 RSLogix 5000 - control	logix5000xertal [1758-01]	g ann		X	100 A			
File Edit View Search [	ogic Communications Tools.	Window	v Help					
0696	Open			•	æ &	80 TE		
	Monitor Tags					·····		
	Edit Tags	n.	<none></none>					<b>T</b>
No Forces	Produced Tags	15			4	2 2		
	Map PLC/SLC Messages	Ш		<u> </u>	ι <sup>ι</sup> Ι	1 ·	· ]	<u> </u>
	Verify	•	Mark Vie	.X. Yerre	e Alexade	K kept	X here be	- NAME - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1

A bar to set arrays will appear. Then right- click [Edit Tag Properties].





Select Data Type		<u>×</u>
Data Types:		_
	OK	Select BOOL, SINT, INT,
ALARM AXIS	Cancel	DINT, OR REAL for the array
BOOL CAM	Help	type.
CONTROL CONTROL COUNTER	-	
DEADTIME DERIVATIVE		Specify the number of
		elements.
Dim 0 Dim 1	Dim 2	* Dimension 1 and Dimension
		2 are not supported by
		GP-PRO PB/III. Do not use

By the above settings, the following array will be made.



### [e.g.; Specifying BOOL]





### [e.g.; Specifying INT]



### [e.g.; Specifying SINT]







## [e.g.; Specifying DINT]

DINT[200]			 	 OK	1
		VSTEM	 <u> </u>	Cancel	
COUNTER DEADTIME DERIVATIN	: /E	I J I L M		 Help	
DINT DISCRETE	2STA	TE			
DISCRETE	_3STA	TE			
DOMINAN	SET		<u> </u>		
Array Dime	ensions		 	 1	
Dim 0		Dim 1	Dim 2		
200		Ю	 0		



### [e.g.; Specifying REAL (Floating Point)]



