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# **Configuring a Rockwell PLC with an Anybus DP-V1 Slave Module**

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## Introduction

Many AIMCO torque controllers come standard with Profibus. A common use is interfacing them to an Allen-Bradley PLC for error proofing and data collection. This document is intended to configure a Rockwell PLC with a Profius DP-V1 module.

## **Equipment/Software**

- Profibus capable controller from AIMCO.
  - Generation 4 controller (iEC4EGVP).
  - Anybus DP-V1 Module.
- 1769-L32E CompactLogix5332E Controller Rev 16.20.
- MVI69-PDPMV1 Master Module.
- RSLogix 5000 Rev v16.3.
- RS-232 to RJ-45 Adapter.

## **Initial Setup**

• Connect RS-232 to RJ-45 adapter to the Modbus module 'CFG' port.



## **ProSoft Configuration Builder**

This document was developed in parallel with 'Using an AIMCO Controller on a Rockwell PLC with Profibus'. It will establish the connection between the Profibus DP-V1 Master Network Interface Module and the Anybus DP-V1 Slave Module.

### **Configuring the Connection**

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Open the ProSoft Configuration Builder (PCB) software. Open a new project, right click on 'Default Module' and select 'Choose Module Type'. The module we are using in this example is the MVI69-PDPMV1. Mark the correct field in 'Product Line Filter' as well as the drop down menu under 'Select Module Type'. See Figure 1

		Produc	t Line Filter—		
C 40	C PLX4000	C PLX6000	C MVI46	C MVI56	O MVI71
N MI	C PLX5000	C PLX30	MVI69	MVI56E	C PTQ
	C MVI69E	C MVI69L			
		Search	Module Type -		
STEP 1:	Select Module T	уре	Module Definit	tion:	
MVI69-	PDPMV1	•			
STEP 2:	Define Ports				
Secti	on	Status	Acti	on Required	
🗸 Co	mment	Used			
🚽 🗸 PD	PM	Used			
					1
				ОК	Cance

Click 'OK' when finished. The following screen should match Figure 2.

			A Division of	AIMCO
	ሻ Untitled - ProSoft Configuration B	Builder		
	File View Project Tools Help	ander		
	🖃 🧰 Default Project	Name	Status	Information
	E 🕞 Default Location	MVI69-PDPMV1	Check Ports for errors	MVI69-PDPMV1
	HVI69-PDPMV1	MVI69	PDM6	1.37
		Comment	Values OK	
		PDPM	Values OK	
		PROFIBUS DP	Check for errors	This Section contains Profibus Configuration Information
		Last Change: Last Download:	Never Never	
		# Module Informatic	n	
e Street		<pre># Last Change: Neve # Last Download: Ne # Application Rev: # OS Rev: # Loader Rev: # MAC Address:</pre>	er vver	
R 97216		# ConfigEdit Versio	on: 4.1.0 Build 4	=
		<pre>Module Configurate [Module] Module Type : MVI69 Module Name : MVI69</pre>	-PDPMV1 9-PDPMV1	
		[Module Comment] # Put Comment Here		
52.1368		[MVI Profibus Maste Input Data Size Output Data Size	er DPV1] : 768 : 768	
	Ready			MVI69-PDPMV1

Figure 2 PCB Main Screen

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Expand the 'MVI69-PDPMV1' tree under 'Default Location' that now replaces the existing 'Default Module'. In that menu, expand 'MVI69-PDPM-V1' and double click 'MVI Profibus Master DPV1'. The only thing we change on this screen is 'Block Transfer Size' (This value must correspond to what is configured in RSLogix 5000). Click on 'Block Transfer Size' and change the value from 240 to 60 under the drop down menu to the right. See Figure 3. Click 'OK'

Input Data Size	768	Block Transfer Size
Output Data Size Input Byte Swap	768 No	60
Output Byte Swap	No	100
Block Transfer Size	60	60
		240
		240
		Definition:
		size of data transfer area
		(60,120 or 240)
		Reset Tag Reset All
		OK Cancel

Figure 3 PCB Edit Profibus Master

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**Figure 5 PCB Configuration** 



Before you start the setup, be sure that you know where the correct .GSD file resides. If you know that the .GSD file already exists in the proper directory, it will appear under the 'PROFIBUS DP' menu tree. Otherwise, you can simply install it using the 'Tools' menu at the top of the screen (see Figure 5). The file will be provided on the manufacturer's website. However, if you install an already existing .GSD file, it will overwrite and delete the file that exists in the directory.

Since we are using the Anybus DP-V1 module and have copied the correct .GSD file into the proper directory, we expand 'PROFIBUS DP'. There is quite a few modules to choose from, but the one we are using is under 'General' and 'HMS Industrial Networks'. See Figure 6.

Section 2012 ProSoft Configuration Builder for PROFIBUS - MV169-PDPMV1 \_ 🗆 🔀 Project View PROFIBUS Online Option Tools Windows Help 🛢 🖨 🖪 📥 🖉 \Prosoft\GSD 🛃 Bus Configuration 1 - **-** X PROFIBUS DP AP PROFIBUS DP
Galeway
General
General
General
Gui HIS Industrial Networks
Gui Telenecarique
Telenecarique PROFIB Drives
Controlle PROFIBUS Master Bus addr... Type Name Vendor Comment ProSof ProSoft Technology



Simply drag 'Anybus CompactCom DPV1 (FW 2.x)' into the 'Bus Configuration 1' screen. This automatically declares it a slave to the ProSoft Profibus Master module that already exists.

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	Project View PROFIBUS Online Option Tools Windows	Help					
		r					
	\Prosoft\GSD <<	🛃 Bus Conf	figuration 1			[	
		(1) ProSoft PROFIBUS Master	(3) Arybus				
10000 SE Pine Street		Bus addr	Тире	Name	Vendor	Comment	
		0	Master	ProSoft	ProSoft Technology		
		2	Slave	Anybus CompactCom DP	HMS Industrial Networks		
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177. 000.202.0410							
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Figure 7 PCB Anybus Slave

Double click the '(3) Anybus' slave and change 'PROFIBUS address' to 4 (This is the value we configured on the AIMCO controller). Click OK.

Slave properties - Anybus CompactCom DPV1 🛛 📀				
Common Parar	meter assignment   DPV1			
		GS* file:	HMSB1811.gsd	
-Module		PROFIBILIS address:		
Vendor:	HMS Industrial Netw		2	
Family path:	General		4 💌	
Model name:	Apubus CompactCom DPV/1	Activate Slave		
modername.		Watchdog		
Slave name:	Anybus CompactCom DPV	Maximum baud rate:	12000 kBit/sec	
		Sync / freeze property	Group assignment	
Comment:				
ОК			Cancel Help	

Figure 8 PCB Anybus Slave Adress



The defaults for the Anybus on the AIMCO controller are shown in Figure 9. It is critical that the inputs and outputs on both the AIMCO controller and the PCB software match. If these configurations are not the same, there will be no communication between the two devices.

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**Figure 9 AIMCO Controller Inputs and Outputs** 

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One very important concept to understand when configuring the inputs and outputs on the PCB software is that the outputs of the AIMCO controller are considered inputs to the Profibus master and vice versa. Thus, we will configure the slave on the PCB software to have 7 input 1-words (AIMCO controller outputs), 3 output 1-words, and 2 output 2-words (see Figure 10). To do this, simply drag the values needed into the cells as shown. Notice that these settings match the default settings shown in Figure 9. Outputs must be at the top of the list. Otherwise, communication will fail.



#### Figure 10 PCB Inputs and Outputs

Save your settings and exit out of the current configuration window. Back at the 'PDPMV1 PROFIBUS Master Setup' menu, click 'OK'.

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