



GE Power Management Control System

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Technical Note #51

GE Power Management Control System

Use Of B&B 2/4 Wire RS-485 Converter With Series 90 Micro PLC

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Subject: Usage of a 2 to 4 wire converter to interface the PMCS 2 wire RS-485 Modbus network and the Fanuc's Series 90 Micro PLC with a 4 wire RS-422 RTU port.

Applies To: PMCS 2 wire RS-485 Modbus network and the Fanuc Series 90 Micro PLC 4 wire RTU port

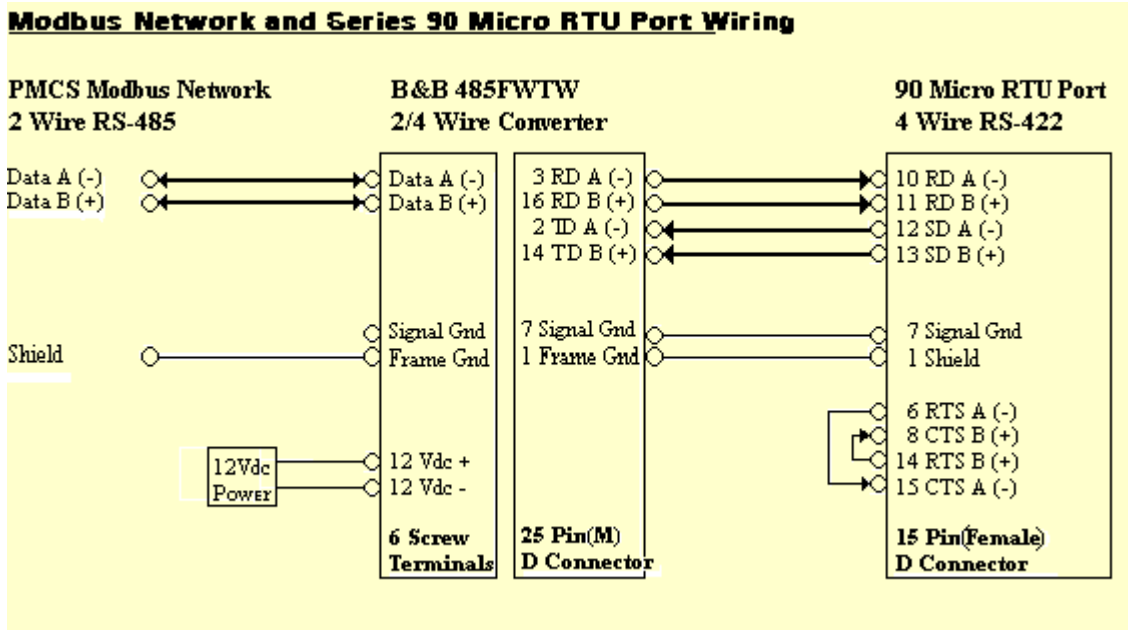
Overview

An effort was made to find an inexpensive low end PLC solution for use with PMCS 2 wire Modbus network system. We found a variety of low end PLCs. Some of them did not support Modbus protocol. Others, who support Modbus, had an interface other than RS-485. For example Modicon's low end PLC supports Modbus but comes with RS-232 interface. Use of additional conversion device is inevitable to interface PMCS with one of these low end PLCs. Fanuc's Series 90 Micro supports both the Modbus RTU and 4 wire RS-485. Series 90 Micro was found to be the closest match that could be hooked up to the PMCS network using an RS-485 4 wire to 2 wire converter. The B&B's Model 485FWTW is an inexpensive small converter. This little 2x3 inch device cost about \$50 and the B&B's 485PS2 Power Adapter cost about \$15. We have successfully used this B&B converter in PMCS network to interface and qualify the low end Series 90 Micro PLC. This application note provides relevant hardware, software, and contact information and the network wiring tips for the Series 90 Micro using the B&B's 485FWTW 4 wire to 2 wire converter.

Hardware / Firmware / Software Models and Versions Used For Testing

SERIES 90 MICRO PLC	Hardware Model:	IC693UDR005, 28 Points, 2 Serial Ports
	CPU Firmware:	Version 3.01(31A1)
PROGRAMING S/W	Logic Master 90/30/20/Micro Version 8.02 on MS-DOS	
	Software Part Number:	IC641SUG306S
	Serial Cable/Converter:	IC690ACC901 (cable+RS-232/RS-485 Converter)
	Or use Horner Electric HE693SNPCBL (cable+HE693SNP232A converter)	
MODBUS HOST S/W	PMCS Version 5.1 on Windows NT 4.0	
2/4 WIRE CONVRTR	Model:	B&B 485FWTW (\$50)
	12 Vdc Power Adapter:	B&B 485PS2 (\$15), Wall Mount Plug
	Alternative panel mount 12Vdc Power Adapter from Telebyte, Model 1510-0037 (\$49), may use the PLC's 24Vdc output and convert to 12Vdc.	
RTU PORT CABLE	Prepare a DB-15 (male) to DB-25 (female) cable as specified below for connecting the Series 90 Micro and the B&B 2/4 wire converter.	





Note: The RTU port ground signal connection is not required but may be connected if needed. A 1-2 ft length should be enough for the 4 wire RTU cable (with 25 pin female and 15 pin male D connectors) between PLC and the 2/4 wire converter. Shield connection may not be important on such a small length. Only port 2 can be used for RTU communication on the 28 point Micro 90.

Contact Information

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	PLC Hotline:	(800) 433-2682 and (804) 978-6036
	Website:	www.gefanucsupport.com
B&B CONVERTER	B&B Electronics	(815) 433-5100
TELEBYTE ADPTR	Telebyte Technology	(800) 835-3298 and (516) 423-3232

Keywords: PMCS, RS-485, RS-422, Modbus, RTU, Network, Series 90 Micro, PLC, Converter.

Related Notes:

none

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