Troubleshooting Serial Communication to Series 90 & VersaMax PLC's from Proficy Machine Edition

GE
Intelligent Platforms

This document references screenshots from Proficy Machine Edition v6.0. This document assumes that you have a project started, and open in Proficy Machine Edition.

The Serial Communication Test Utility was not available from the Utility tab of the Navigator in earlier versions of Proficy Machine Edition. If this is not included in your installation of PME, it may be downloaded from:
http://support.ge-ip.com/support/index?page=kbchannel&id=09237d4900112023bed2600169

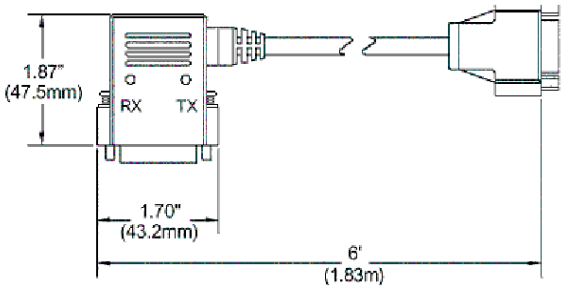
To ensure that the same screens are being observed, please select the "Window" menu and choose "Apply Theme". Choose the "Logic Developer PLC" theme.

Serial Connection Troubleshooting

Needed Cabling:

The **main cable** that you need to connect to your processor is the **IC690ACC901**. This 9 to 15 pin cable has a RS-485/RS-232 Mini-Converter & cannot be built.

The data sheet on this cable can be found at:
http://support.ge-ip.com/support/index?page=docchannel&id=09237d4900112007ff7cf00371e



If there is a **CMM serial communication module** on the Series 90 rack (IC693CMM311 or IC697CMM711) you can connect through this port. Change the CMM configuration to *SNP* (RS-232 is needed), and run the programming software through the CMM using either the **IC690CBL702** (9-pin AT). The best way to connect would be through Port 1 of the CBL305 (wye cable for the CMM). Due to firmware limitations this will give you Level 2 access only. You may write to any data memory, except overriding discrete I/O. The PLC can be started or stopped. PLC and I/O fault tables can be cleared. This cable can be built if needed.

NOTE: SNP master and slave on the CMM do not support PLC programming or configuration functions.

Cbl702 pin out is:
9 pin 25pin
1->4-------8
2-----------2
3-----------3
7-----------5
8-----------20
5-----------7
1 shield

If using a **VersaMax modular** PLC, you can connect with either with the IC690ACC901 or through port 1 with a 9 (female) to 9 (male) pin straight through serial cable. These cables are **available at any retail electronics store**.

If using a **VersaMax Nano/Micro**, you can connect with either with the IC690ACC901 or through port 1 **IC200CBL500** Programming cable (RJ-45 to DB-9 pin) RS-232. This cable could be built if needed.

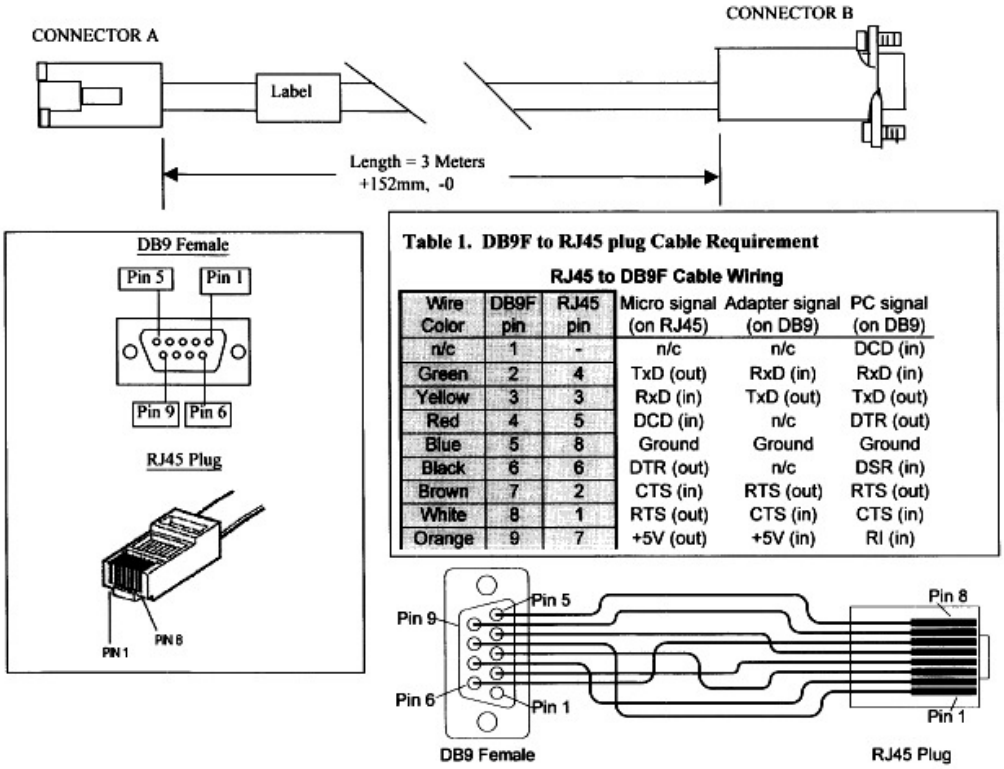


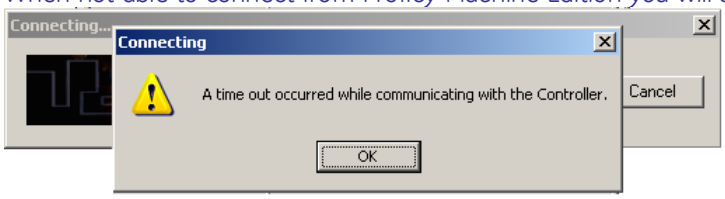
Table 1. DB9F to RJ45 plug Cable Requirement

RJ45 to DB9F Cable Wiring

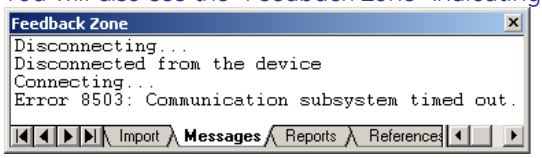
Wire Color	DB9F pin	RJ45 pin	Micro signal (on RJ45)	Adapter signal (on DB9)	PC signal (on DB9)
n/c	1	-	n/c	n/c	DCD (in)
Green	2	4	TxD (out)	RxD (in)	RxD (in)
Yellow	3	3	RxD (in)	TxD (out)	TxD (out)
Red	4	5	DCD (in)	n/c	DTR (out)
Blue	5	8	Ground	Ground	Ground
Black	6	6	DTR (out)	n/c	DSR (in)
Brown	7	2	CTS (in)	RTS (out)	RTS (out)
White	8	1	RTS (out)	CTS (in)	CTS (in)
Orange	9	7	+5V (out)	+5V (in)	RI (in)

If you have the required cabling and are unable to connect

When not able to connect from Proficy Machine Edition you will see:

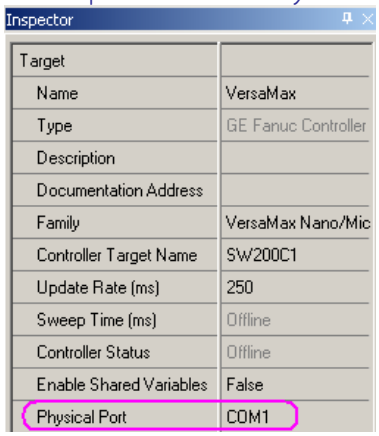


You will also see the "Feedback Zone" indicating:



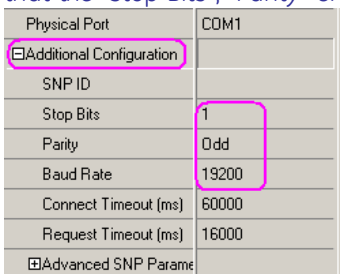
By default GE Intelligent Platforms PLC hardware ships with default port setting of :
Data Rate (bps) 19200
Parity Odd
Stop Bits 1

To verify the serial connection settings, right click on the "Target" and choose properties. Look in the "Inspector" for the "Physical Port" properties. Ensure that the correct port is chosen.



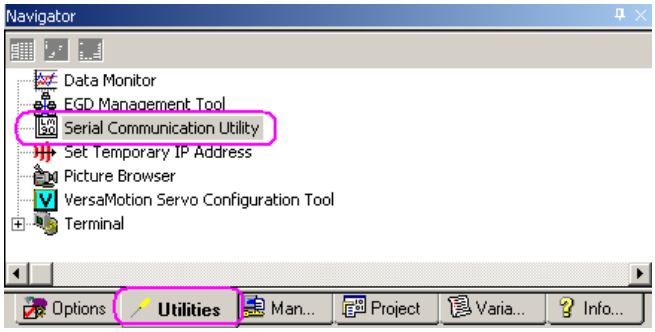
If the correct port is chosen and you still cannot connect, look at the settings for the port connection.

Right click on the "Target" , choose properties and expand the "Additional Configuration". Ensure that the "Stop Bits", "Parity" & "Baud Rate" are set to 19200, Odd and 1.



If there is still no connection, use a tool named “Serial Communication Test Utility”

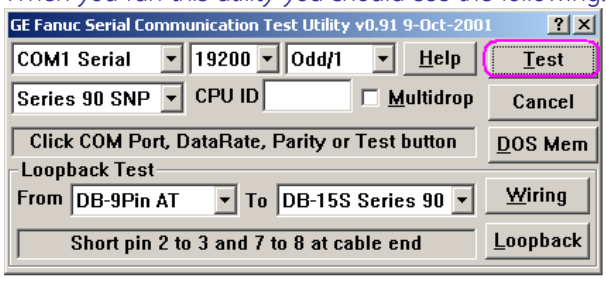
The Serial Communication Test Utility is included in the “Utilities” tab of the “Navigator”.



NOTE “Serial Communication Test Utility” was not available in from the “Utility” tab of the “Navigator” in earlier versions of Proficy Machine Edition.

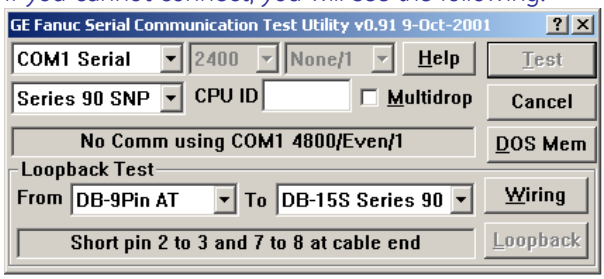
If this is not included in your installation of PME under the “Utility” tab, it may be downloaded from: http://support.ge-ip.com/support/index?page=kbchannel&id=09237d4900112023bed2600169

When you run this utility you should see the following. Left click the “Test” button.



If you see the following, review your PC for other programs running in the background that could be using a communication port. Offenders such as Palm Pilot or RSLinx and others typically will grab a communication port, terminate the offending application and retry the connection.

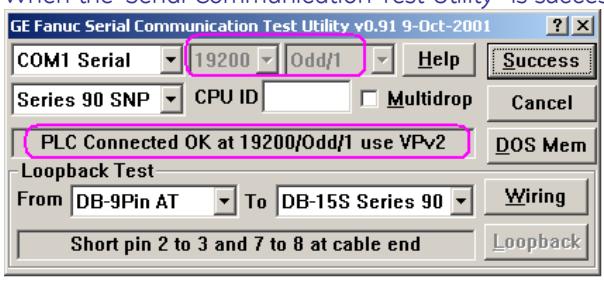
If you cannot connect, you will see the following.



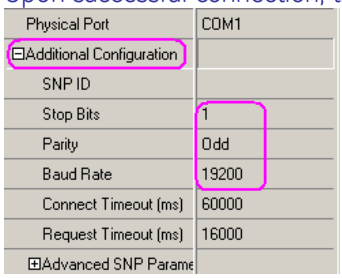
Press "Cancel" and then the "Loopback" button to start the loopback test. This sends characters A to Z out the transmit line and tries to read the same data back on the receive line. It also toggles the RTS output line and monitors the CTS receive line for the same status. You must jumper Send to Receive (normally pins 2 to 3) and RTS to CTS (pins 7 to 8 on DB-9 or 4 to 5 on DB-25 connector.

If there is no connection, look for another port to use or another PC.

When the 'Serial Communication Test Utility" is successful, you will see the following



Upon successful connection, transfer connected settings to the "Target" properties in the "Navigator".

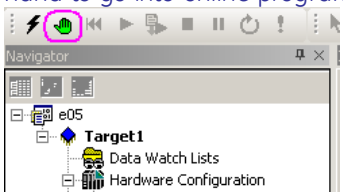


How to know when you are connected

When offline, the target looks like  .

When you first connect online, the target should look like  .
The bottom right hand corner of the screen should look similar to:

This indicates the programmer is currently in online & monitor only mode. Left click the small green hand to go into online programmer mode.



Your target should now look bright green 
The bottom right hand corner of the screen should look similar to

 indicates online monitor mode, controller and program not equal

 indicates online monitor mode and stop faulted

 indicates online programmer mode and stop faulted

 indicates online programmer mode, controller and program not equal

If using a PC with no serial port

GE Intelligent Platforms (formerly GE Fanuc) supports communication by means of the HE500USB600A serial port USB adapter. Other serial port USB adapters may work but are not officially supported. They may be unable to handle the Break character required by GE Intelligent Platforms controllers.

For more information on the HE693SNPUSB-B, please contact Horner APG
http://heapg.com/
877-665-5666