



7550 Routes 5 & 20
Bloomfield, NY 14469
Telephone: (716) 657-6151; (716) 624-1080
Fax: (716) 657-6153

Velmex, Inc. NF90 Quick Start

*****Note***** Following documentation is for a quick setup and operation of the NF90 series in its most basic configurations. Documentation does not account for control of any kind beyond that of a single axis controller. For multiple axis control or multiple controllers, refer to users manual.

Under normal operation a few safety cautions **MUST** be observed to ensure the life of controllers and any attached components (motors, cables, secondary systems). A few of the most common precautions include:

- 1.) **Never** connect or disconnect motors to controller with power applied to the controller
- 2.) **Never** attempt to run motors not built for the controller, refer to users manual for proper motors and their setup configurations. (VP9000 users see P.50; NF90 users see P.5 of their respective users manuals). If in doubt whether motor meets criteria contact Velmex personnel.
- 3.) **Never** bind motor or limit cables together, and under **ABSOLUTELY NO CONDITIONS** should motor and limit cables be bound together.
- 4.) **Never** remove controller cover
- 5.) **Never** use in an explosive environment
- 6.) Controller should be placed at least 6 inches from any other objects and air must circulate freely around the controller to reduce any extraordinary heating conditions.
- 7.) Customer may do no modifications to operating system without expressed permission from Velmex, Inc. Velmex personnel should do any attempts at modifications and/or repairs.

Failure to follow above guidelines may result in undesired results, and may void any warranties expressed or implied

Category	Sub Category	Users Manual Page(s)	Quick Start Page(s)
General User Setup			
	Standard Communication Parameters	6	2
	Jog / Slew Mode	7	2
	Online Mode (Computer Control)	7	3
	VBTerm download		3
	VBTerm Setup		4 - 7
Advanced User Setup			
	Wiring connections	30 - 33	8



7550 Routes 5 & 20
Bloomfield, NY 14469
Telephone: (716) 657-6151; (716) 624-1080
Fax: (716) 657-6153

Setup:

The following information is for communications with an NF90 and some sort of communication software. Some software packages include LabView and Visual Basic, however any software capable of transmitting and receiving of ASCII characters may be used.

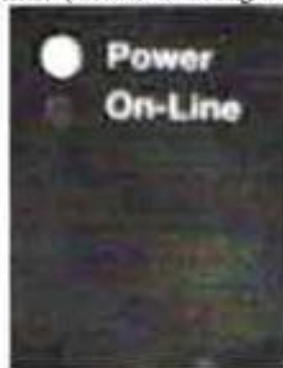
Standard Communication Parameters:

Serial Port: User selects port (most commonly port 1 or port 2)
Baud rate: 9600
Parity: Even
Data bits: 7
Stop bits: 2

Jog / Slew Mode:

By default when the NF90 controller is powered up, the controller is in Jog/Slew mode and may be operated with the directional keypad at a default velocity of 1000 steps per second. Jog/Slew mode is indicated when the red LED is lit and the Yellow LED is not.

NF90 Offline (Controller in Jog/Slew mode)



NF90 directional keypad





7550 Routes 5 & 20
Bloomfield, NY 14469
Telephone: (716) 657-6151; (716) 624-1080
Fax: (716) 657-6153

Online Mode (Computer Control)

The NF90 has the capabilities of being controlled from a computer via the RS232 Serial Port Communications. Most any program with the ability to send and receive ASCII characters via the Serial Port should be able to communicate with the NF90. Many programming languages have this capability, some of which include (but not limited to) C/C++/Fortran/Pascal/Assembly/Labview and even the DOS operating system. Some applications include (but not limited to) HyperTerminal (generally installed when a Windows operating system is installed) VBTerm (can be found at www.velmex.com). For the purpose of this quick setup the VBTerm program is used for its ease of use.

When the controller is under computer control the indicator lights appear as shown below with both the Power and the On-Line LED's lit up.

NF90 Online (Computer has control of the NF90)



VBTerm download

If the user does not have the CD that accompanies the NF90 controller a copy of VBTerm can be downloaded at www.velmex.com and then click the following links.

- 1.) Downloads
- 2.) Motor controllers
- 3.) Vbterm.exe

Or the same can be found by entering <http://www.velmex.com/software/vbterm.EXE> into the users Internet Browser.

Once the program has been downloaded then the user may install the program to whatever directory that they wish just as they would with any other software program. As this is a quick start for the NF90, a tutorial for how to install software is not covered here. If a user needs assistance in how to install programs then they should contact their systems administrator for assistance.

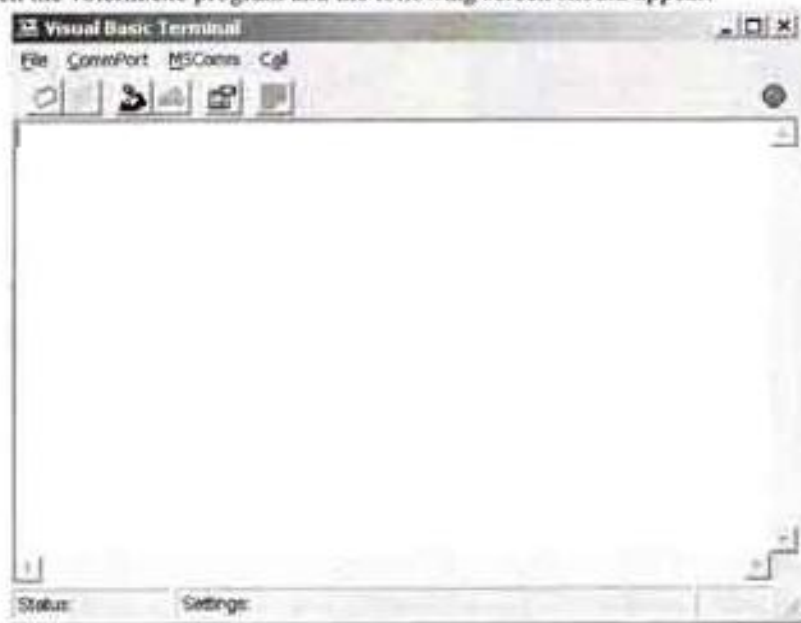


7550 Routes 5 & 20
Bloomfield, NY 14469
Telephone: (716) 657-6151; (716) 624-1080
Fax: (716) 657-6153

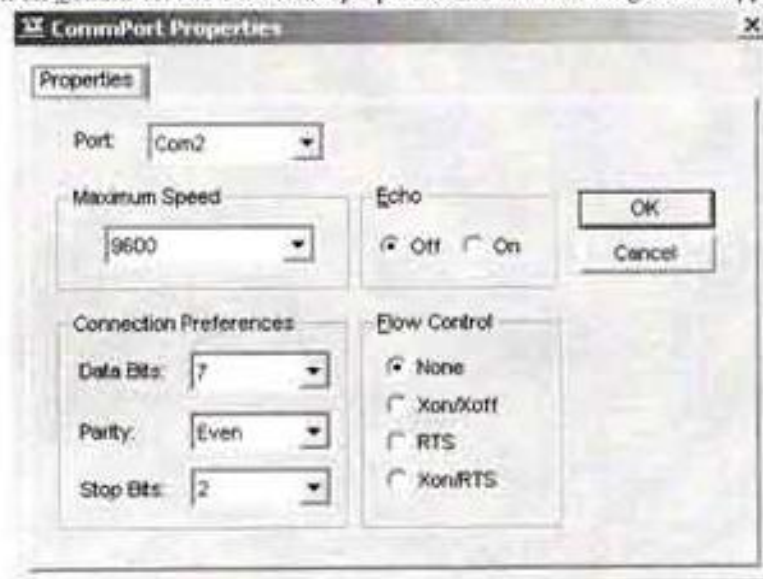
VBTerm Setup:

*****NOTE*** if the motor, limit or RS232 serial cable is not connected follow the wiring connections section before attempting these directions**

- 1.) Open the vbterm.exe program and the following screen should appear:



- 2.) Click on CommPort and then select properties and the following should appear:



- 3.) Set the properties **EXACTLY** as seen above with the exception of the Port, which could be any port that the NF90 is connected to (most likely Com1).



7550 Routes 5 & 20
Bloomfield, NY 14469
Telephone: (716) 657-6151; (716) 624-1080
Fax: (716) 657-6153

- 4.) Once the settings are complete Click the OK button
- 5.) Ensure that the caps lock key is on, as the controller will not recognize lower case characters.
- 6.) In the terminal type the letter "E" (as seen below), and check to see if the On-Line LED on the controller lit up

NF90 View



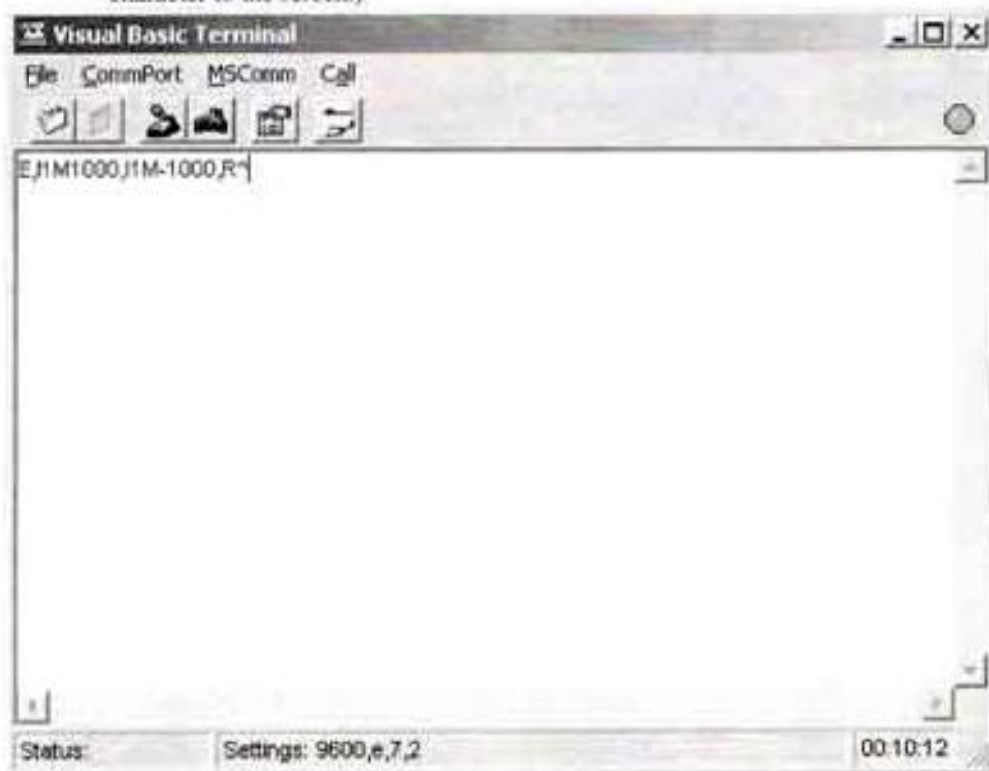
VBTerm View





7550 Routes 5 & 20
Bloomfield, NY 14469
Telephone: (716) 657-6151; (716) 624-1080
Fax: (716) 657-6153

- 7.) Type in the following command so that it appears as the screen below: (**Note** when the user presses the "R" that the program runs and the motors move 1000 steps in the positive direction and then moves 1000 steps in the negative direction and upon completion of the motion the controller sends the "" character to the screen.)



Congratulations! The user has now correctly set up communications and interfaced with the NF90. To control multiple axis, or to continue with different motions, refer to users manual (P.8-26).

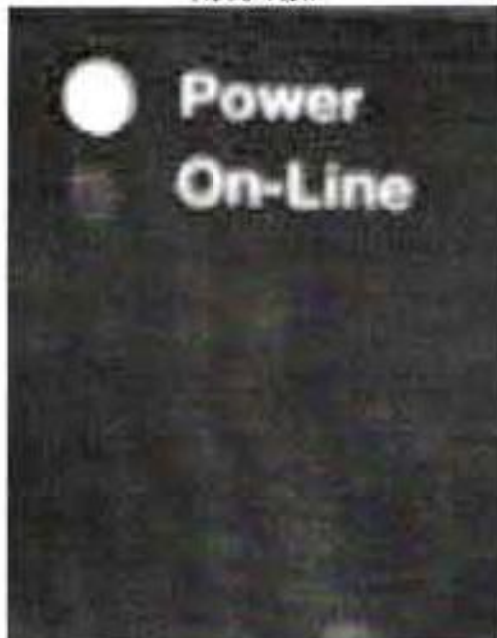
Once the user is finished communicating with the NF90 Controller they should follow steps 8-10 to return the controller to its original Jog/Slew state.



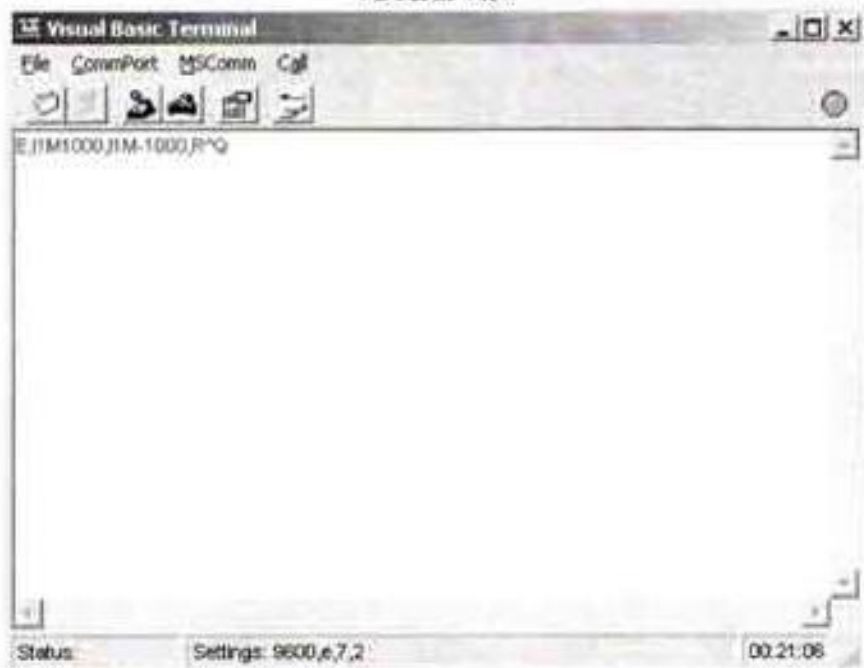
7550 Routes 5 & 20
Bloomfield, NY 14469
Telephone: (716) 657-6151; (716) 624-1080
Fax: (716) 657-6153

- 8.) Type in the "Q" so that the interface appears as seen below. (**NOTE** the NF90 On-Line LED goes out at this point.)

NF90 View



VBTerm View



- 9.) Click on CommPort and then select Port Open and the screen should appear as follows: (notice the LED in the upper right corner has changed from green to red)



- 10.) Congratulations The user has now correctly set up communications, interfaced with the NF90 and returned the NF90 to its Jog/Slew state



7550 Routes 5 & 20
Bloomfield, NY 14469
Telephone: (716) 657-6151; (716) 624-1080
Fax: (716) 657-6153

NF90 General Wiring connections:

