



AirCare VariPhase™ can be configured and controlled from a PC through it's MODBUS interface. ModScan (www.win-tech.com) for Windows provides a simple interface for viewing and modifying VariPhase™ control registers. Information on register usage can be found in another VariPhase™ Technical Application Note.

When using ModScan to configure or run AirCare VariPhase™ units first be sure that the equipment is all compatible. VariPhase™ can be configured in Analog or Network Control modes, but JP1 must be removed to allow Network control of Motor Speed (Registers 1 and 2).

Equipment Set up:

- Computer with ModScan loaded (sample software times out quickly so have a licensed version)
- RS232 to RS485 converter. Make sure 4-wire or 2-wire is set per your hook-up (check Installation Manual if there are any questions).
- Wire up the RS485 converter to the VariPhase™ Unit through the 7-pin Connector or using an RJ45 cable connector.
- Wire the VariPhase™ Unit to the Line Voltage and Fan Load per Installation Manual

Set-Up before powering unit:

- VariPhase™ Unit set-up.. make sure unit is set at address 1 .. make sure jumper 3 (9600 baud) is closed .. all other jumpers are open if using VariPhase™ in open loop control (otherwise follow Installation Manual for closed-loop set-up).
- Open ModScan – setup: set **Length = 16, Modbus Point Type =03, Device ID = 1**

Procedure for Connecting to VariPhase:

1. Turn on power to VariPhase unit.
2. Run ModScan
 - a. From the pull-down menu, select **CONNECTION**, then **CONNECT**
 - b. In the Connection Details Dialog Box, Select the Serial port being used for RS232/RS485 communications
 - c. Select the following communications parameters: 9600 baud, 8 data bits, no parity and 1 stop bit. Click OK.
3. On the Main ModScan Window, set the following parameters:
 - a. Device ID = 1 (This must match the DIP switch address of the VariPhase unit).
 - b. Length = 18 (Number of Registers to be displayed).
 - c. Address = 1 (This is the first register to be displayed).
 - d. Select “Holding Register” (MODBUS Point Type #3) to display register data
4. At this point ModScan should display the contents of all 18 registers. Normally the values will be the factory default settings (see Installation Manual). If data is not correctly displayed check the following:
 - a. Check NET light to be sure it is blinking.
 - b. Check MODSCAN “Number of Polls” to see that unit is polling and “Valid Slave Responses” to be sure it is registering.
 - c. Re-check the prior steps.

Procedure for Controlling Motor Speed:

1. Double click on a Registers' value to change it. Enter the new value in the pop-up dialog and click Update to save.
2. Register 1 (40001 in MODSCAN) controls the on/off of unit set to "1" to turn on set back to "0" to turn off
3. Register 2 (40002) controls the speed setting – from "0" (off) to "99" (full on). Set speed to desired speed.
4. Registers 3,4, and 5 control the PID and used for closed loop only (Default settings are 4000, 700, and 2000.. *do not change values*).
5. Register 6 is used to provide a reading of the closed loop motor speed (in RPM).
6. You can adjust the minimum speed by adjusting the speed potentiometer on the VariPhase Unit .. you can see the setting value change in register 7 (ranges from "0" to "1022" as you go from zero minimum to full speed minimum). Please note that the VariPhase unit has a built-in minimum software speed limit of approximately 20% Manual reduction of the speed potentiometer below the pre-set minimum will not reduce minimum speed levels below that set-point.

Procedure for Configuring VariPhase (advanced):

1. Registers are either Read Only (such as Current RPM) or Read/Write (such as PID control loop values). Refer to the Installation Manual or Application Note for more detail.
2. Double click on a Registers' value to change it. Enter the new value in the pop-up dialog and click Update to save.
3. In some cases, changing the display number format will make registers easier to view. The ModScan tool bar allows formats including Hex, Integer and Floating Point (not used in VariPhase). For example, select Hex number format (0x) to view Register 11 (Version Information) easily.
4. ModScan does not check the limits of any updated configuration value. Ensure that all new values are sensible by referring to the Installation Manual first.