

ANIMATICS

Application Note: **Power and communication setup for ServoStep Motor**
For ST23XX, ST34XX

Rev. 1 5/05/06

The ServoStep motor is an integrated servo motor using step motor technology. The controller power input and the amplifier power input are separated from each other. In this case, two power sources are required. The power input for the controller can range from 20Vdc to 36Vdc (max) where the power for amplifier can range from 20Vdc to 75Vdc. For application where the motor can be back driven or require hard acceleration, it is recommended that a SHUNT is added to the power supply for amplifier power. This will help protect the motor from back EMF. Figures 1 and 2 show the wiring between the ServoStep Motor and the power supplies.

The ServoStep motor uses RS485 (half-duplex) communication on channel 0. Since the motor is default to communicate through RS485, the motor does not need RS485 configuration. The default setting for RS485 is:

- 9600 baud rate
- None parity
- No flow control
- 1 stop bit
- 8 data bit

SMI will also need to configure to RS485 communication. The configuration setup is RS485 for Comm Type and Channel 0 for Motor Channel. To do this, please do the following:

1. Go to the Configuration window at the far left hand side of SMI and right click on the comm port that is wired to RS485 on the ServoStep Motor.
2. Choose Properties.
3. In the properties window, select RS485 for Comm Type and Channel 0 for Motor Channel.
4. Then choose OK to save setting and close Properties window.
5. Right click on same comm. port again and select Detect Motor on RS485 Bus. This will cause SMI to detect the motor. Once the motor is detected, the motor icon will be listed under the comm. port.

All ServoStep motor is default to motor with address #1. To change the motor address, right click on the motor icon and choose Set Motor Address. Then change the address value in the Set Address Window. This new address will not take into affect until the motor is reset (either by power cycle or a Z command). The other method of setting motor address is by transmitting a program to the motor with the set address command. This can be either SADDR# or ADDR=#.

The RS485 bus is recommended to have biasing and terminating resistors. There should be two biasing resistors. One is between RS485-A and 5Vdc and the other is between RS485-B and GND. The value of these resistors is about 510 ohm. The terminating resistor is placed between RS485-A and RS485-B in the opposite end of the RS232485T or USB232485. Both the RS232485T and the USB232485 have the biasing resistors built in but adding external biasing resistor between RS485-B and GND and between RS485-A and +5Vdc are recommended. Please see figures 1 and 2.

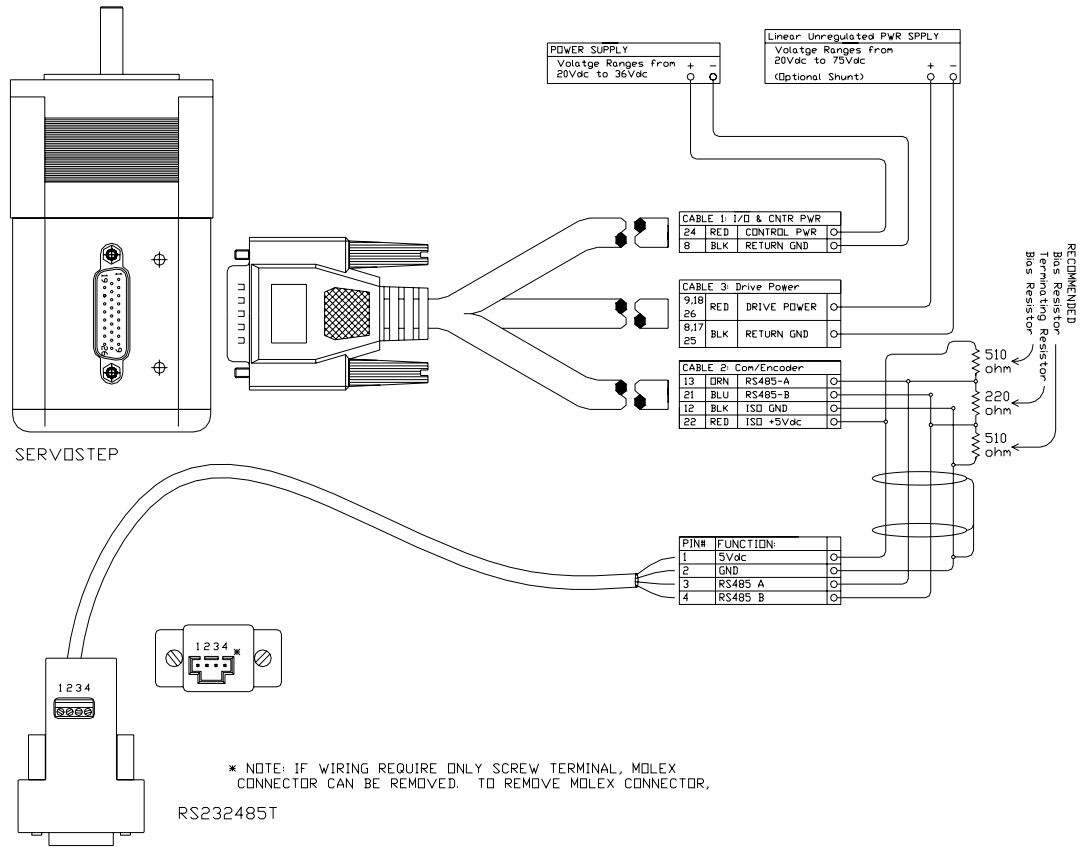


Figure 1. RS485 Wiring Diagram between RS232485T and Channel 0 on ServoStep Motor

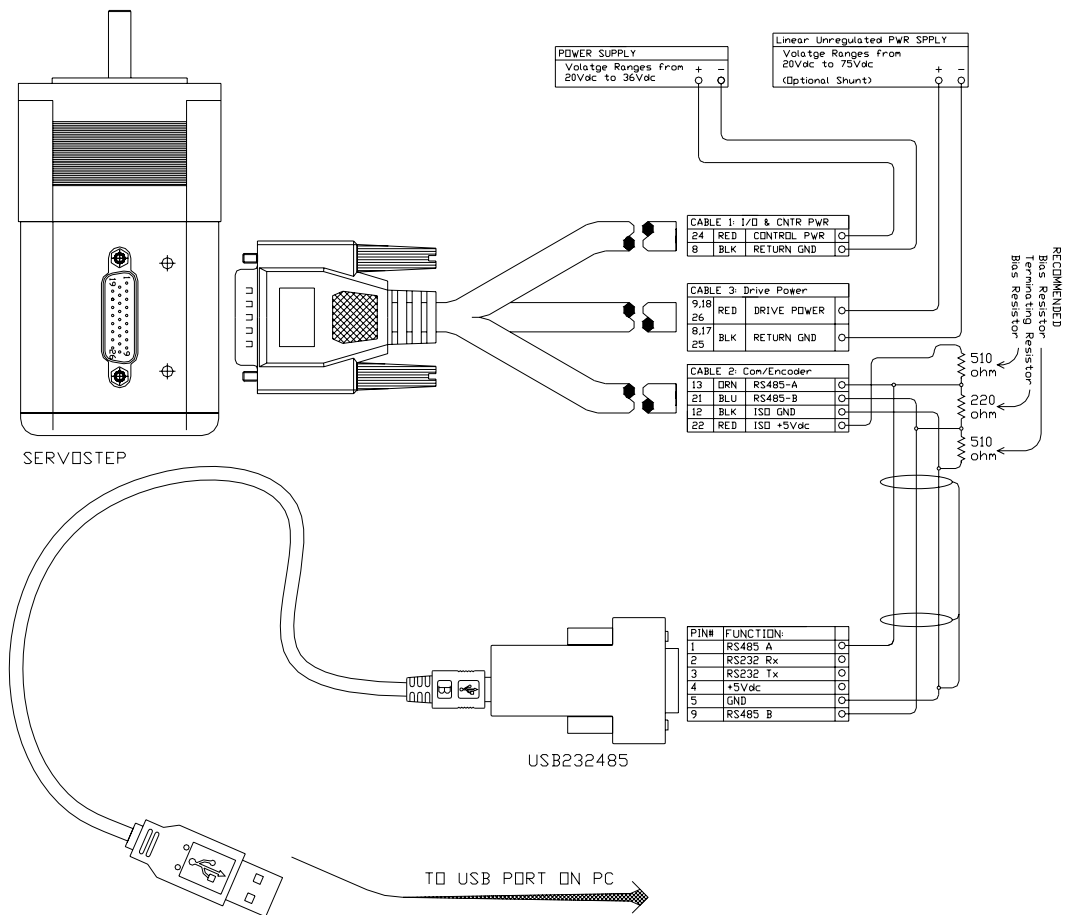


Figure 2. RS485 Wiring Diagram between USB232485 and Channel 0 on ServoStep Motor