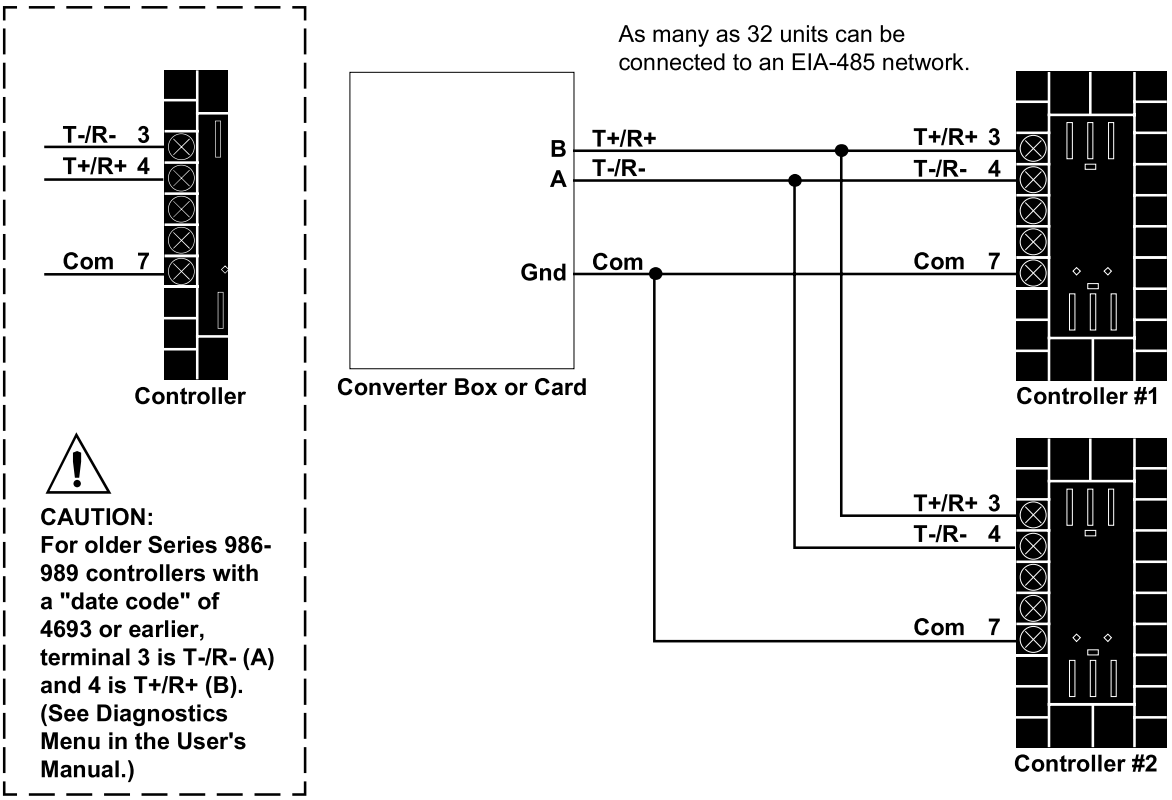
## EIA-485 Interface Wiring

**NOTE:**
**The Electronic Industry Association EIA-485 standard recommends a maximum total network distance of 4,000 feet.**

The EIA-485 communications uses a three-wire, half-duplex system. There are two lines for transmitting and receiving and a common line. Only one device, the computer or a controller, can be speaking at a time. **The controller requires at least a 7-millisecond delay between transmission and receipt of data.** With EIA-485 you can have from one to thirty-two controllers connected to a computer.

This diagram is a **typical** wiring example for units shipped after 1993 (**see ⚠ Caution on this page**). The connections on the host computer may vary, depending on the model. Refer to your computer user's manual for specific information.



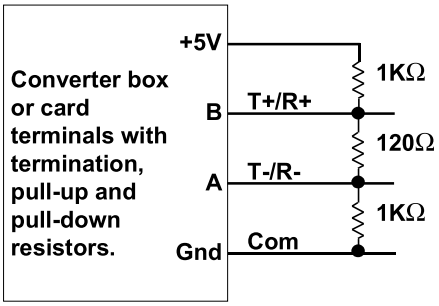




**Figure 2.3 - EIA-485 Interface Wiring Diagrams.**

If the system does not work properly it may need termination resistors at each end of the network. A typical installation would require a 120-ohm resistor across the transmit/receive terminals (3 and 4) of the last controller in the network and the converter box or serial card. Pull-up and pull-down resistors may be needed to maintain the correct voltage during the idle state.