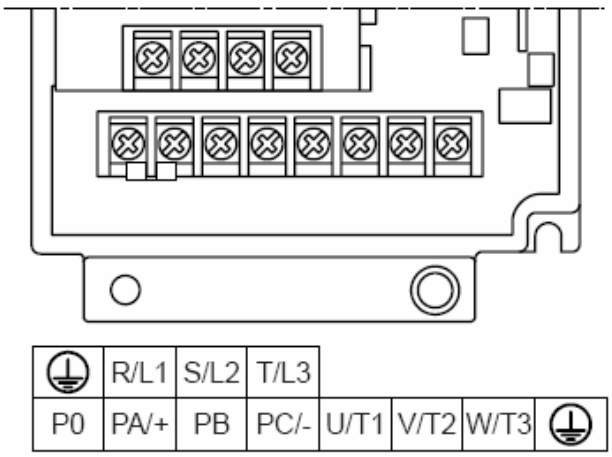
Wiring for 3HP and 5HP HSD Collet Spindles with Altivar 31 Inverter

WARNING! DISCONNECT POWER TO MACHINE AND POWER TO BE SUPPLIED TO INVERTER BEFORE PROCEDING

ATV31HU11M3X, HU15M3X, HU22M3X, HU30M3X, HU40M3X, H037N4, H055N4, H075N4, HU11N4, HU15N4, HU22N4, HU30N4, HU40N4, H075S6X, HU15S6X, HU22S6X, HU40S6X



Motor and Power Terminal strip inside inverter

Wiring instructions:

1. Connect spindle cable to inverter:
   Terminals U/T1, V/T2, W/T3 are the terminals that connect to the spindle motor.

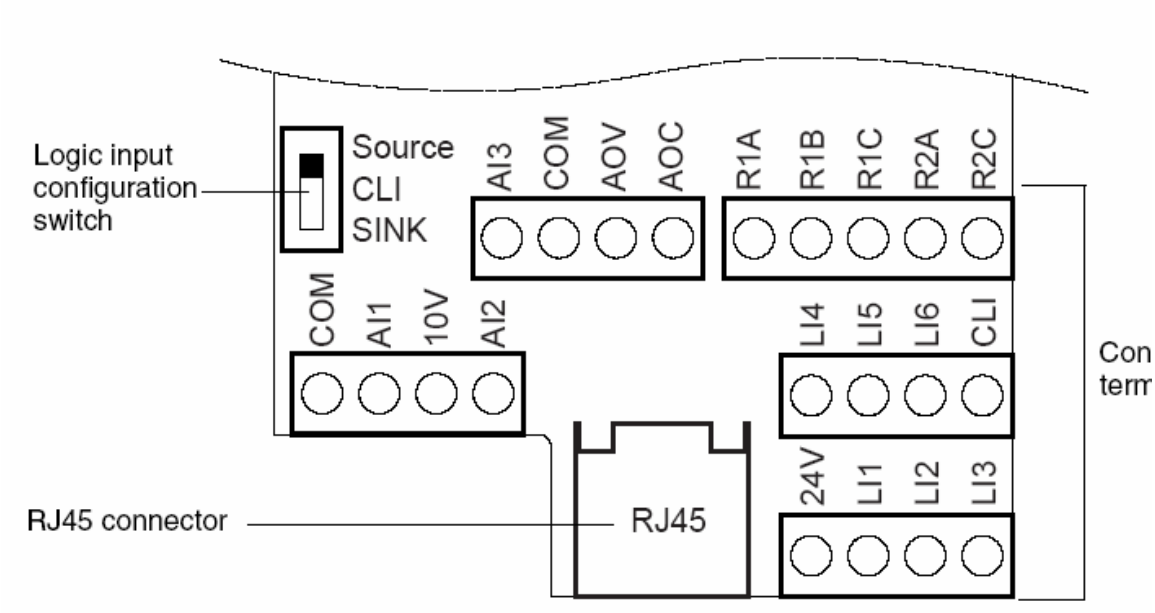
   The power cable that attaches to the spindle has 4 wires. There are 3 black wires numbered 1 through 3 and one yellow wire with a green stripe.

   The wires connect to the terminals as follows:

Terminal	Wire Number
U/T1	1
V/T2	2
W/T3	3

   Yellow/Green wire, connect to ground terminal.

2. Connect spindle control cable to inverter (This cable may come pre-attached to the inverter, if it is, skip this step.):
   The spindle control cable is a 2 conductor cable with a red and black wire. It has a DB9 connector on one end if it is to be used with an LC series machine or a 2 pin Molex connector if it is to be used on an LC+, LCX, or Premium Class machine.



Control Terminals in Inverter

Connect the red wire to terminal 24V and the black wire to terminal LI1

3. Connect the control cable to the machine controller.
   a. Remove the cover from the machine controller
   b. Connect the connector on the end of the control cable to connector P5, inside of the machine controller box, if you have an LC series machine or connector J17 (also labeled Inverter Run) if you have an LC+ or LCX series machine.

4. Connect power to the inverter

! WARNING
VERIFY THAT THE INCOMING VOLTAGE TO BE SUPPLIED TO THE INVERTER MATCHES THE VOLTAGE RATING OF THE INVERTER. IF YOU ARE UNSURE WHAT THE VOLTAGE IS, MEASURE THE VOLTAGE WITH A VOLTMETER. THE VOLTAGE RATING OF THE INVERTER CAN BE FOUND ON THE INVERTER NAMEPLATE. CONNECTION OF INCORRECT VOLTAGE WILL RESULT IN DAMAGE. ALL POWER CONNECTIONS ARE TO BE PERFORMED BY AN ELECTRICIAN OR QUALIFIED PERSON

All power installations must be done in accordance with all applicable electrical codes, In the U.S. , NFPA 70 and any local electrical codes, in Canada, Canadian Electrical code Part 1 and any local electrical codes.

Power to the inverter must be supplied through a properly fused safety disconnect switch or other suitable disconnect device as defined by electrical codes.

For 3 phase power:

If incoming power is 3 phase, connect power to terminals R/L1, S/L2, and T/L3. Connect ground to the ground terminal.

For single phase power:

If the incoming power is single phase, **verify that your inverter is properly rated for single phase operation. Single phase operation is permitted for 220-240V operation only. 3 phase Altivar 31 inverter power ratings must be derated for single phase operation. The inverters must be rated as follows:**

For a 3HP spindle to operate on single phase power with an Altivar 31 inverter, the inverter must have a minimum rating of 5HP, 3 phase.

For a 5HP spindle to operate on single phase power with an Altivar 31 inverter, the inverter must have minimum rating of 10HP, 3 phase.

Connect incoming single phase power to terminals R/L1, and S/L2. Connect ground to the ground terminal.

5. Check all connections to verify that everything has been done correctly. Close all covers. Apply power.

6. Programming:

It is likely that your inverter arrived pre-programmed for your spindle and no programming is necessary. If not, please program as per the programming instruction sheet provided by Techno or as directed by Techno. If you are not sure if programming is required, please contact Techno. Programming parameters must be set as instructed; failure to do so may result in failure of the spindle or inverter.

7. Your spindle is ready for use.