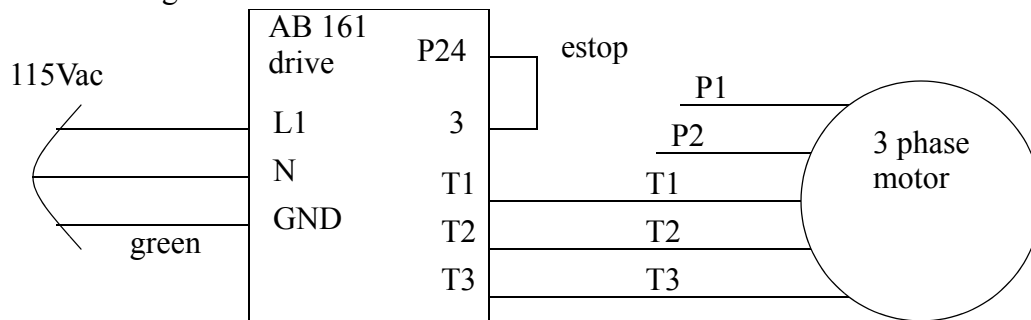


### 13.0.1 Tutorial - Allen Bradley 161 Variable Frequency Drives

- The motor should be connected to the drive as shown in the figure below. The three phase power lines are T1, T2 and T3. These can be connected to the drive by loosening the screw on the front face of the drive. (WARNING: make sure the power is off before opening the drive, and reseat the drive when done) The two other lines P1 and P2 from the drive are for a thermal overload relay, we will not use these. For general caution the ends of the wires should be covered with electrical tape to prevent accidental contact with other conductors. The wire from P24 (a 24V power source) and input 3 are for an emergency stop and must be connected for the drive to work. These terminals can be found under a flip up panel on the bottom front of the drive that can be opened by pulling on the right side of the face.

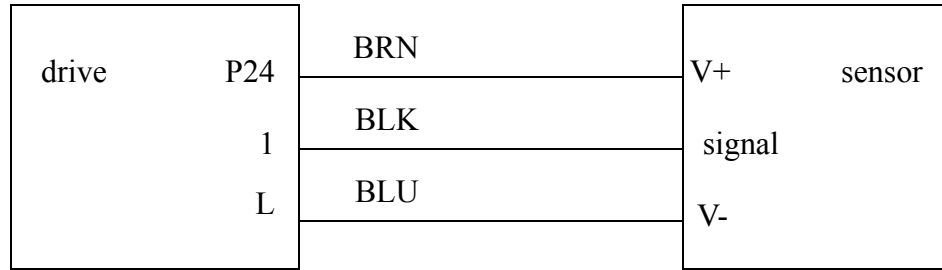


- Notice the display and lights on the front face of the drive. When a program is running the 'RUN' light is on. The program can be started using the green '1' button, and stopped with the red '0' button.
- Program the unit using the buttons on the front panel, following the steps below (from page 17 in the manual). After the steps have been followed press the run button and turn the potentiometer to vary the speed. Try holding the shaft (cover the shaft to avoid cuts) at high and low speeds. What do you notice at very low speeds?

button(s)	result	description
sel	d01	move the the parameter number, from frequency
up or down	A--	move to the 'A' parameters
sel	A01	select the 'A' parameter group (use up or down if not A01)
up or down	00	select the velocity input source
sel	01	display the current setting
up or down	00	select the potentiometer (on the controller) as the input
enter	A01	accept the new value
up or down	A02	move the the start button selector
sel	01	move to parameter
up or down	02	select the value for start to the 'run' button
enter	A02	accept the value

- Connect a proximity to the controller as shown in the diagram below. Display the input values using 'D05'. The bits on the screen should move up for an

active input, and down for an inactive input. Input 3 will always be active because it is being used for the emergency stop (a factory default).



5. Various display parameters are listed below. Try these to see what information they show.

- D02 - display the motor current (try holding the shaft while turning slowly)
- D01 - display the frequency of rotation
- D03 - the direction of rotation
- D04 - PID parameters (when in use)
- D05 - input status
- D06 - output status
- D16 - total drive run time in 10 hour blocks

6. Function parameters can be set with the 'F' locations. Change the acceleration and deceleration times to 1 second using the 'F02' and 'F03' locations.

7. Restore the controller to the factory defaults using the sequence below from page 16 of the manual.

button(s)	result	description
up or down	b--	move to the 'B' parameter groups
sel	b01	enter the
up or down	b84	move to the reset function
sel	01	select the function, make sure the value is '01'
sel	b84	select the value
sel+up+down+0	b84	hold down the keys for 3 seconds
sel+up+down	00 then 0.0	release the '0' key and continue to hold the others until the display blinks.