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Precision Engineering
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How To Determine Wire Numbers

If no cable markers are found, you can easily determine where to connect each wire as follows:

- Find the pair of wires with resistance value of approximately 0.4 ohms between them. These are the thermal switch leads. Mark T1 and T3 for reference.

- Find the 3 wires with measurable resistance between them. These are the power leads. If the motor is 3 phase, mark L1, L2, L3 and proceed with your connections.

If the motor is 1 phase, you must determine the start, run and common leads.
Mark the leads A,B, and C, measure the resistance between the combinations and record below:
wire A and B _____; wire A and C _____; wire B and C _____
(Example: A and B - 4.7 ohms ; A and C - 2.6 ohms; B and C - 8.3 ohms)

The highest resistance is always between wires Z2 and U2. This lets you determine which lead is U1 common, since it is the wire that is not in the highest resistance pair. In the example, the highest resistance value is between wires B and C, so we know wire A is lead U1. Mark this wire U1.

The next highest resistance reading will be between U1 and Z2 (start winding). Determine which pair of wires has the second highest resistance reading. This will be a combination of U1 and one of the other wires. Mark the unmarked wire Z2. U1 should already be marked.

The final, unmarked wire is now known to be U2. Verify that the resistance between U1 and U2 is the lowest value as a final check, and then mark the last wire U2.

Now you can use the wiring diagram to determine connections to control panel.