

Procedure 5.5 - Troubleshooting the 3 Phase AC Drive Motor System

Circuit Description

The power control module converts single phase 120Vac or 240Vac into three phase variable frequency current for the AC drive motor. The motor speed is controlled by controlling the frequency of the drive motor current.

1. When taking voltage readings of the AC drive motor current, the readings will not be accurate because of the frequencies being used, however, they are indicative of the presence of drive motor voltage and relative frequency changes.
2. If the symptoms are the drive motor starts when you force the running belt to move and once running the drive motor runs "rough", skip to step 10. If the drive motor will not start continue with step 3.
3. If the drive motor does not start, the power control module will only apply voltage for a couple of seconds before it shuts down. Therefore the voltage readings in the following step must be taken within the first couple of seconds after the treadmill is instructed to start the running belt.
4. Connect an AC voltmeter between terminals 4 & 5 of the **OUTPUT** connector on the power control module. See Diagrams 5.3 and 5.4. Set the treadmill's on/off switch in the "on" position. Press the **QUICK START** key. If the power control module is supplying output, you will momentarily read approximately 55 Vac. Set the treadmill's on/off switch in the "off" position.
5. Repeat the procedure in step 4 between terminals 4 & 6 of the **OUTPUT** connector on the power control module.
6. Repeat the procedure in step 4 between terminals 5 & 6 of the **OUTPUT** connector on the power control module.
7. If one or more of voltage readings in steps 4 through 6 are not present, replace the power control module. If the voltage readings in steps 4 through 6 are present, continue with step 8.
8. Set the treadmill's on/off switch in the "off" position. Disconnect the drive motor connector from the **OUTPUT** connector on the power control module. With an ohmmeter, measure between terminals 4 & 5, 4 & 6 and 5 & 6 of the drive motor connector. Each reading should be approximately 2.5Ω. If any of the readings are significantly high or open, replacement the drive motor.
9. If you have performed all of the procedures above and have been unable to correct the problem, call Precor customer service.

10. Connect an AC voltmeter between terminals 4 & 5 of the **OUTPUT** connector on the power control module. See Diagrams 5.3 and 5.4. Set the treadmill's on/off switch in the "on" position. Press the **QUICK START** key. If the power control module is supplying output, you will momentarily read approximately 55 Vac.
11. Repeat the procedure in step 4 between terminals 4 & 6 of the **OUTPUT** connector on the power control module.
12. Repeat the procedure in step 4 between terminals 5 & 6 of the **OUTPUT** connector on the power control module.
13. If one or more of voltage readings in steps 4 through 6 are not present, replace the power control module. If the voltage readings in steps 10 through 12 are present, skip to step 8