

## Procedure 5.4 ó Troubleshooting the Fan Sensor (Units manufactured prior to 9/29/2000)

### Note:

The fan sensor function was discontinued on 9/29/2000. This section pertains only to units manufactured prior to 9/29/2000. The fan sensor is an infrared photo-eye sensor that emits a pulse when the infrared beam emitted by its transmitter is reflected back to its receiver. A reflective target covers half of the fan hub. Therefore as the fan rotates, the infrared beam is reflected during half of the fan's rotation and is not reflected during the other half of the fan's rotation. This causes the speed sensor to emit a square wave pulse train that indicates the fan's rotating speed. Circuitry on the lower logic PCA processes the pulse train emitted by the fan sensor and determines if the fan speed is within the normal operating range. If the fan speed is found to be below nominal limits, a fan speed error will occur (error 13).

1. **If the drive motor cooling fan is operating and an error 13 is occurring, go to step 15.**
2. If the drive motor cooling fan is not operating continue with step 3.
3. Set the treadmill's circuit breaker in the "off" position and remove the AC line cord from the AC outlet.
4. Remove the F3 (Fan) fuse from the lower logic PCA. Using an ohmmeter, check the resistance of the F3 fuse. See Diagram 5.2. The fuse should measure approximately 1  $\Omega$  or less. If the fuse is open or high resistance, replace the fuse.
5. Insert the treadmill's line in the AC outlet and set the circuit breaker in the "on" position. If the drive motor cooling fan operates normally, test treadmill operation per Section 3. If the drive motor cooling fan still does not operate, retest the fan fuse per steps 3 & 4. If the fuse is open again, go to step 12. If the fuse is good continue with step 6.
6. Set the treadmill's circuit breaker in the "off" position. Remove the fan wires from terminals M2 (blue) and M3 (brown) of the lower logic PCA. See Diagram 5.2. Set the treadmill's circuit breaker in the "on" position. Carefully measure the voltage between terminals M2 & M3 of the lower logic PCA. The meter should read AC line voltage (120 Vac or 240 Vac). If the reading is 0 or significantly low, replace the lower logic PCA.
7. Set the treadmill's circuit breaker in the "off" position. Using an ohmmeter, measure the resistance between the blue and brown wires that were removed from the lower logic PCA. The ohmmeter should read approximately 345 $\Omega$ .
8. If the resistance is significantly high or open, remove the blue and brown wires from the fan.
9. Measure the resistance between the two terminals of the fan. The reading should be approximately 345 $\Omega$ . If the reading is open or significantly high, replace the drive motor cooling fan per Procedure 6.7.

10. If the reading in step 9 was normal, either or both of the blue and brown wires is bad. Check the wires from end to end with an ohmmeter, the reading should be less than  $1\Omega$ . If either wire reads open or significantly high, replace the wire.
11. If you have performed all of the above procedures and have been unable to correct the problem, call Precor Customer Support.
12. Set the treadmill's circuit breaker in the 'off' position. Replace fuse F3. Remove the fan wires from terminals M2 (blue) and M3 (brown) of the lower logic PCA. See Diagram 5.2. Set the treadmill's circuit breaker in the 'on' position. Carefully measure the voltage between terminals M2 & M3 of the lower logic PCA. The meter should read AC line voltage (120 Vac or 240 Vac). If the reading is 0 or significantly low, replace the lower logic PCA.
13. Set the treadmill's circuit breaker in the 'off' position. Using an ohmmeter, measure the resistance between the blue and brown wires removed in step 12. If the resistance is significantly lower than  $345\Omega$ , replace the drive motor cooling fan per Procedure 6.7.
14. If you have performed all of the above procedures and have been unable to correct the problem, call Precor Customer Support.
15. Set the treadmill's circuit breaker in the 'off' position. Remove the F3 fan fuse from the lower logic PCA. Set the treadmill's circuit breaker in the 'on' position.
16. Measure the DC voltage between terminals 1 & 3 of connector J7 on the lower logic PCA. The meter should read approximately 5 Vdc. If the reading is correct go to step 19. If the reading is 0 or significantly low, continue with step 17.
17. Remove the fan sense plug from the J7 connector on the lower logic PCA and repeat step 16. If the reading is now correct, replace the fan sense PCA per Procedure 6.5. If the reading is still 0 or significantly low, replace the lower logic PCA.
18. If you have performed all of the above procedures and have been unable to correct the problem, call Precor Customer Support.
19. Connect the DC voltmeter between terminals 2 & 3 of connector J7 on the lower logic PCA. Slowly rotate the fan blade by hand. The voltmeter should alternate between approximately 0 Vdc and 5 Vdc as the fan blade is rotated.
20. If the voltage reading in step 19 does not alternate between 0 Vdc and 5 Vdc and the fan hub is equipped with a reflective target, replace the fan sense PCA per Procedure 6.5.
21. If you have performed all of the above procedures and have been unable to correct the problem, call Precor Customer Support.