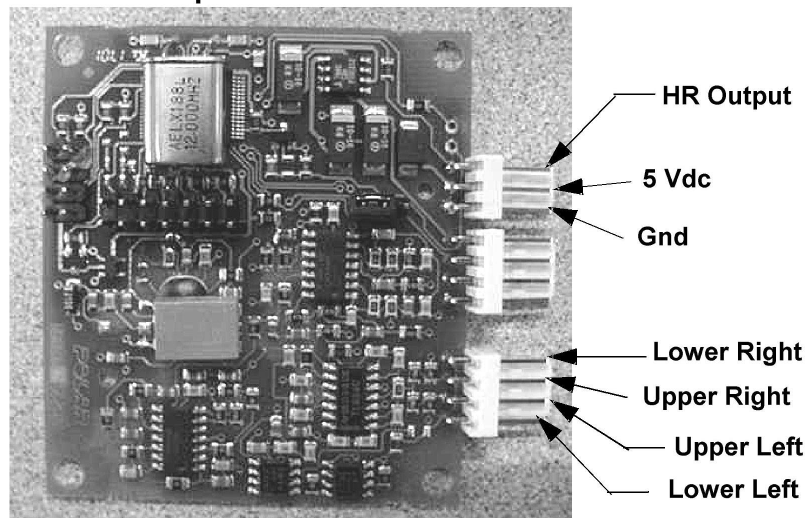


Procedure 5.3 - Troubleshooting Hand Held Heart Rate

Circuit Description

The hand held heart rate system is actually a dual system, that is, it can accept a heart rate signal from either the hand held heart rate contacts on the handlebar or from a Polar heart rate chest strap transmitter. The system is set for hand held heart rate priority, that is if both a chest strap and hand heart rate signal is being received, the system will accept the hand held signal and ignore the chest strap signal.

Diagram 5.5 - Hand held/chest strap heart rate PCA



Normal hand held reading - No chest strap reading

1. Set the on/off switch in the "on" position and access the diagnostic program (Procedure 2.1). Advance to the heart rate display portion of the diagnostic program. Verify that a chest strap signal is not being accepted with either a Polar heart rate test transmitter or a known good chest strap transmitter. If this reading is good, skip to step 3.
2. Using a Polar heart rate test receiver, verify the operation of the chest strap transmitter. If the Polar heart rate test receiver does not receive a signal, replace the chest strap transmitter.
3. Set the on/off switch in the "off" position and remove the display housing.
4. Verify that a ferrite bead is installed on the heart rate PCA to upper PCA cable.
5. If the above procedures did not correct the problem, replace the heart rate PCA.

No hand held reading - Normal chest strap reading

6. Set the on/off switch in the “on” position and access the diagnostic program (Procedure 2.1). Advance to the heart rate display portion of the diagnostic program. Verify that a hand held signal is not being accepted by firmly grasping both the right and left hand held contacts. Cover as much of the contact surface area with your hands as possible, you should receive a heart rate reading within ten seconds. If a hand held signal is still not being accepted, continue with step 7. If a hand held signal is now being received, they user may not have been making good contact with the grips. There may be nothing wrong. Retest both hand held and chest strap readings, if normal there is no heart rate problem.
7. Grasp both the right and left hand held contacts with the opposite hands, right hand on the left handlebar contacts and left hand on the right handlebar contacts. Cover as much of the contact surface area with your hands as possible, you should receive a heart rate reading within ten seconds. If a hand held signal is still not being accepted, skip to step 9.
8. If a hand held signal was accepted in step 7, the hand held contact wiring is reversed. The end of the wire harness that connects to the hand held contacts in the handlebar is segregated into two groups. One group has blue shrink wrap around it and the other group has black shrink wrap around it. The “blue” group must go to the right hand contacts and the “black” group must go to the left hand contacts. In both groups the black wire must go to the lower contact and the red wire must go to the upper contact. If necessary, rewire the hand held contacts as described above and test as described in step 7.
9. Set the on/off switch in the “off” position. Refer to Diagram 5.5 for the following measurements. With an ohmmeter measure between the “lower right contact” pin on the J1 connector and the lower right hand held heart rate contact on the handlebar. The reading should be 1 Ω or less. Measure between the “upper right contact” pin on the J1 connector and the upper right hand held heart rate contact on the handlebar. The reading should be 1 Ω or less. Measure between the “upper left contact” pin on the J1 connector and the upper left hand held heart rate contact on the handlebar. The reading should be 1 Ω or less. Measure between the “lower left contact” pin on the J1 connector and the lower left hand held heart rate contact on the handlebar. The reading should be 1 Ω or less. If any of the above readings are greater than 1 Ω , replace the heart rate PCA to handlebar wire harness.

No hand held reading - No chest strap reading

10. Set the on/off switch in the “on” position and access the diagnostic program (Procedure 2.1). Advance to the heart rate display portion of the diagnostic program. Verify that neither a chest strap signal or a hand held signal is being accepted with either a heart rate test transmitter or a chest strap transmitter.
11. Check the plug/connector connections on both the heart rate PCA, and upper PCA.
12. If neither a chest strap signal or a hand held signal is being accepted, measure between the “ground” and “5 Vdc” pins on J4 for 5 Vdc. If 5 Vdc is present, replace the heart rate PCA.

13. If 5 Vdc is not present, remove the connector from J4 of the heart rate PCA. Measure between the “ground” and “5 Vdc” pins of the connector (just removed from the heart rate PCA) for 5 Vdc. If 5 Vdc is present, replace the heart rate PCA. If the 5 Vdc is not present, measure between the corresponding pins of J17 on the upper PCA (red and black wires). If 5 Vdc is not present replace the upper PCA. If 5 Vdc is present, replace the upper PCA to heart rate PCA cable.

Constant or intermittent readings when neither the hand held or chest strap is in use

14. Constant or intermittent heart rate readings when neither heart rate system is in use is caused by something in the near vicinity radiating RF energy that is being received by the chest strap portion of the heart rate PCA.
15. If the hand held signal is now being accepted, something in the near vicinity is radiating RF energy that is being received by the chest strap portion of the heart rate PCA. Disabling the chest strap signal proves that it is radiated energy that is causing the problem.
16. The source of the radiated energy must be determined and relocated so that it no longer affects the heart rate PCA. Televisions, cell phones, Cardio-theatre receivers, etc. are possible sources of radiated energy.