

CLAIMS

1. A skin interface device (SID) for an implantable cardiac assist device, comprising a processor, a non-transitory computer readable medium, and computer readable program code encoded in said non-transitory computer readable medium, the computer readable program code comprising a series of computer readable program steps to effect receiving signals from one or more implanted EKG sensors, the device further comprising circuitry operable to prevent an electric shock applied externally to the device from rendering the device inoperable.
2. The skin interface device of claim 1, said computer readable program code further comprising a series of computer readable program steps to effect:
 - evaluating signals received from one or more implanted EKG sensors with reference to certain nominal signal characteristics encoded in computer readable program code; and
 - rejecting signals received from one or more interconnected EKG sensors when those signals do not meet said nominal signal characteristics.
3. The skin interface device of claim 1, said computer readable program code further comprising a series of computer readable program steps to effect combining signals received from one or more implanted EKG sensors.
4. The skin interface device of claim 1, wherein the electric shock is generated by a defibrillator.
5. The skin interface device of claim 4, wherein the electric shock has a voltage of about 100, 200, 300, 400, 500, 600, 700, 800 or greater.
6. The skin interface device of claim 1, said computer readable program code further comprising a series of computer readable program steps to effect analyzing signals received from one or more implanted EKG sensors to detect a QRS complex.
7. The skin interface device of claim 1, further comprising data encoded in said non-transitory computer readable medium.

8. The skin interface device of claim 7, wherein the data comprises information regarding the operational status of the device.
9. The skin interface device of claim 8, wherein the data pertains to an error in operation of a component, timing or volume of fluid pumping, pumping pressure, or usage of a component.
10. The skin interface device of claim 7, wherein the data comprises information of status of the patient.
11. The skin interface device of claim 10, wherein data comprises patient medical history or a physiological parameter.
12. The skin interface device of claim 11, wherein the physiological parameter is selected from EKG signals, pulse, body temperature, blood pressure, a blood analyte concentration, or a combination thereof.
13. The skin interface device of claim 7, wherein the data comprises an event log or status log.
14. The skin interface device of claim 7, wherein data is collected and stored as a function of time.
15. The skin interface device of claim 1, wherein the device is operable for use with air as a pumping medium.
16. An arterial interface device for implantation into a subject, comprising:
 - a body formed to include two lumens extending therethrough;
 - wherein a first lumen formed in said body is configured to accept a pneumatic drive line interconnecting a partially implanted skin interface device and an implanted pump cardiac assist device, and wherein the skin interface device further comprises circuitry operable to prevent an electric shock applied externally to the device from rendering the device inoperable.

17. The arterial interface device of claim 16, further comprising:
a pressure sensor;
wherein a second lumen formed in said body is configured to house said pressure sensor.
18. The arterial interface device of claim 17, further comprising:
a plurality of sensor leads extending outwardly from said body;
wherein said plurality of sensor leads are configured to be attached to said partially implanted skin interfaced device.
19. The arterial interface device of claim 18, wherein said plurality of leads comprises:
a power lead;
a clock lead;
a ground lead; and
a data lead.
20. The arterial interface device of claim 16, wherein the device is operable for use with air as a pumping medium.
21. The arterial interface device of claim 16, wherein the electric shock is generated by a defibrillator.
22. The arterial interface device of claim 21, wherein the electric shock has a voltage of about 100, 200, 300, 400, 500, 600, 700, 800 or greater.