SYSTEMS AND METHODS OF DERIVING PRESSURES EXTERNAL TO AN INTRACARDIAC BLOOD PUMP USING INTERNAL PRESSURE SENSORS

ABSTRACT

Systems and methods for deriving pressures outside of a blood inlets and blood outlets of an intracardiac blood pump assembly, and pressure differentials therebetween. Pressures outside of a blood inlet may be derived based on one or more readings from a pressure sensor placed within a blood inlet, one or more readings from a differential pressure sensor configured to measure pressure differential across a wall of the pump housing or cannula, and speed of the pump motor. Pressure differentials between a blood inlet and blood outlet may be derived based on one or more readings from the differential pressure sensor and speed of the pump motor. Pressures outside of a blood outlet may be derived based on a derived pressure outside of a blood inlet and a derived pressure differential between the blood inlet and the blood outlet.

[Fig. 4]