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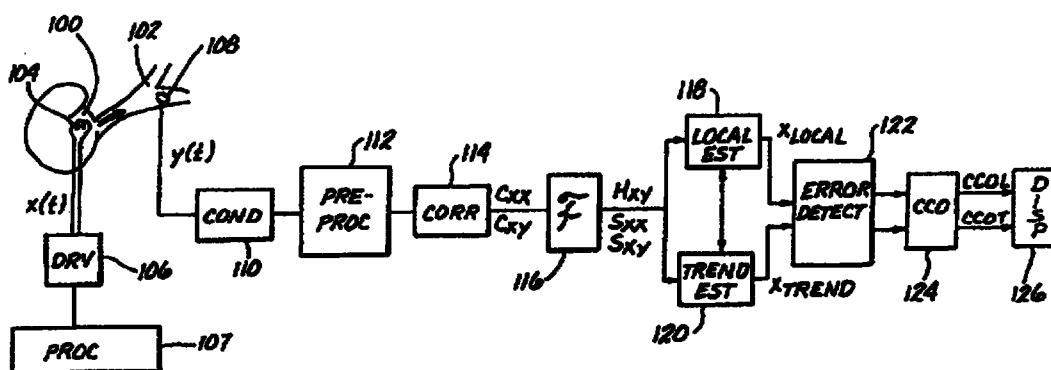
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(54) Title: **SYSTEM AND METHOD FOR ESTIMATING CARDIAC OUTPUT**



(57) Abstract

Cardiac output CO is separately estimated in a local estimator (118) and a trend estimator (120) to provide CO values. A preferably thermal indicator is injected preferably according to a pseudo-random binary sequence signal ( $x(t)$ ) profile at an upstream position in a blood flow region of a patient's body and is sensed as an indicator (108) output signal ( $y(t)$ ) at a downstream position. Low-frequency noise is preferably removed from the sensed indicator output signal. The local and trend estimations are based on measured frequency-domain transfer function values between the sensed and input indicator signal in relation to a pre-determined transfer function model, which is preferably a lagged normal model. The trend estimator is preferably a Kalman filter. The local estimator preferably forms its estimate based on non-recursive optimization of a cost function. The local estimator preferably provides initial values to start the trend estimator.