excluding the second plurality of the values. The evaluation unit applies a transformation to the filtered time-domain pressure signal to generate a frequency-domain pressure signal/ The evaluation unit adjusts the frequency-domain pressure signal, based on a ratio between a size of the second plurality of values of the time-domain pressure signal and a total sample window of values of the time-domain pressure signal. The evaluation unit determines a patient status metric for the patient based upon the adjusted frequency-domain pressure signal via an equation that considers a plurality of harmonic frequencies.

[0007] In a second aspect of the present disclosure, which may be combined with any other aspect listed herein unless specified otherwise, the pump is a peristaltic IV pump.

[0008] In a third aspect of the present disclosure, which may be combined with any other aspect listed herein unless specified otherwise, the pump is configured to operate periodically, such that the one or more active time segments and the one or more inactive time segments periodically alternate.

[0009] In a fourth aspect of the present disclosure, which may be combined with any other aspect listed herein unless specified otherwise, the tube is disposed between the patient and the pump such that a part of the pump is in fluid connection with the circulatory system of the patient via the tube.

[0010] In a fifth aspect of the present disclosure, which may be combined with any other aspect listed herein unless specified otherwise, the transducer comprises a pressure sensor disposed in fluid connection with an interior of the IV tube, and the physical phenomenon associated with the pressure is a pressure within the interior of the IV tube.

[0011] In a sixth aspect of the present disclosure, which may be combined with any other aspect listed herein unless specified otherwise, the evaluation unit further determines whether the patient status metric indicates a condition of the patient is abnormal, and adjusts operation of the pump when the patient status metric indicates the condition of the patient is abnormal by changing a rate of flow of a fluid from the pump into the circulatory system of the patient

[0012] In a seventh aspect of the present disclosure, which may be combined with any other aspect listed herein unless specified otherwise, the evaluation unit generates the filtered time-domain pressure signal by, for each of one or more pairs of the active time segments, identifying one or more corresponding values within both of the active time segments of the pair, and combining the active time segments of the pair by aligning the one or more corresponding values within both of the active time segments of the pair.

plurality of the values of the time-domain pressure signal associated with the one or more inactive time segments and a second plurality of the values of the time-domain pressure signal associated with the one or more active time segments via forward and backward slope detection of the time-domain pressure signal. The evaluation unit deletes the second plurality of values of the time-domain pressure signal. The evaluation unit generates a filtered time-domain pressure signal based upon the first plurality of the values and excluding the second plurality of the values. The evaluation unit applies a transformation to the filtered time-domain pressure signal to generate a frequency-domain pressure signal. The evaluation unit adjusts the frequency-domain pressure signal, based on a ratio between a size of the second plurality of values of the time-domain pressure signal and a total sample window of values of the time-domain pressure signal. The evaluation unit determines a patient status metric for the patient based upon the adjusted frequency-domain pressure signal via an equation that considers a plurality of harmonic frequencies.

[0018] In a thirteenth aspect of the present disclosure, which may be combined with any other aspect listed herein unless specified otherwise, the time-domain pressure signal comprises a first time series of discrete values, the filtered time-domain pressure signal comprises a second time series of discrete values, and the second time series contains at least one segment of a sequential plurality of values within the second time series that are equivalent to a corresponding segment of a sequential plurality of corresponding values within the first time series.

[0019] In a fourteenth aspect of the present disclosure, which may be combined with any other aspect listed herein unless specified otherwise, the evaluation unit generates the filtered time-domain pressure signal by estimating a third plurality of values as substitute values for the one or more active time segments, where the third plurality of values are estimated based upon the first plurality of values without reference to the second plurality of values, and generating the filtered time-domain pressure signal by combining the first plurality of values for the inactive time segments and the third plurality of values for the active time segments.

[0020] In a fifteenth aspect of the present disclosure, which may be combined with any other aspect listed herein unless specified otherwise, adjusting the frequency-domain pressure signal includes dividing magnitudes of the frequency-domain pressure signal by a quotient of the second plurality of values and the total sample window of values.

[0021] In a sixteenth aspect of the present disclosure, which may be combined with any other aspect listed herein unless specified otherwise, a method of monitoring a patient using a

measurement associated with a pressure within a circulatory system of the patient while the circulatory system of the patient is connected to a pump includes monitoring, by a transducer, a physical phenomenon associated with the pressure of the patient over a sample period. The sample period includes a plurality of time segments, including (i) one or more active time segments during which the pump is operating and (ii) one or more inactive time segments during which the pump is not operating. The method includes obtaining, by a processor of an evaluation unit, a time-domain pressure signal comprising values of an electronic signal associated with the pressure from the transducer based upon the monitored physical phenomenon over the sample period. The method includes identifying, by the processor of the evaluation unit, a first plurality of the values of the time-domain pressure signal associated with the one or more inactive time segments and a second plurality of the values of the time-domain pressure signal associated with the one or more active time segments via forward and backward slope detection of the time-domain pressure signal. The method includes deleting the second plurality of values of the time-domain pressure signal. The method includes generating, by the processor of the evaluation unit, a filtered time-domain pressure signal based upon the first plurality of the values and excluding the second plurality of the values. The method includes applying, by the processor of the evaluation unit, a transformation to the filtered time- domain pressure signal to generate a frequency-domain pressure signal. The method includes adjusting the frequency-domain pressure signal, based on a ratio between a size of the second plurality of values of the time-domain pressure signal and a total sample window of values of the time-domain pressure signal. The method includes determining, by the processor of the evaluation unit, a patient status metric for the patient based upon the adjusted frequency-domain pressure signal via an equation that considers a plurality of harmonic frequencies.

[0022] In a seventeenth aspect of the present disclosure, which may be combined with any other aspect listed herein unless specified otherwise, generating the filtered time-domain pressure signal includes removing the one or more active time segments from the time-domain pressure signal.

[0023] In a eighteenth aspect of the present disclosure, which may be combined with any other aspect listed herein unless specified otherwise, generating the filtered time-domain pressure signal includes estimating a third plurality of values as substitute values for the one or more active time segments, where the third plurality of values are estimated based upon the first plurality of values without reference to the second plurality of values, and generating the filtered