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(54) **Centrifugal fluid pump assembly**

(57) A centrifugal fluid pump assembly (200) comprises a centrifugal fluid pump (205) and a control device (206). The centrifugal fluid pump (205) comprises a centrifugal fluid pump section including a housing and an impeller having a first magnetic material and a second magnetic material disposed thereof and accommodated for rotation in the housing and without contacting the housing, an impeller rotational torque generating section including a rotor having a magnet for attracting the first magnetic material and a motor for rotating the rotor, and an impeller position control section having an electromagnet for attracting the second magnetic material. The control device (206) includes a monitoring function of monitoring electric current flowing through the electromagnet; a monitoring function of monitoring motor-driving current; a monitoring function of monitoring the number of rotations of the motor; and a function of determining whether or not the impeller has a power swing by utilizing a current value monitored by the electric current monitoring function, a value of the motor-driving current monitored by the motor-driving current monitoring function, and the number of rotations of the motor monitored by the monitoring function of monitoring the number of rotations thereof.

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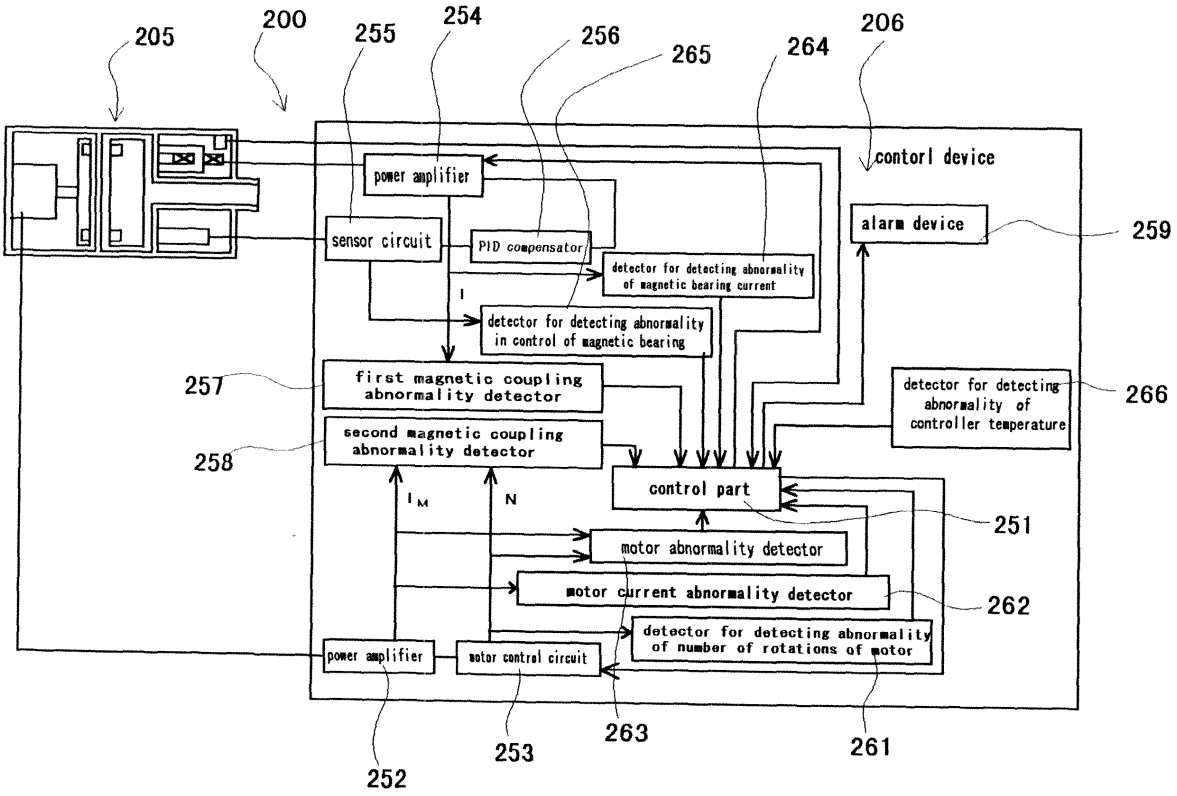
FIG. 15


205
200
255
254
256
265
264
206
power amplifier
contorl device
sensor circuit
PID compensator
alarm device
259
detector for detecting abnormality of magnetic bearing current
I
detector for detecting abnormality in control of magnetic bearing
257
first magnetic coupling abnormality detector
detector for detecting abnormality of controller temperature
266
second magnetic coupling abnormality detector
258
control part
I_M
N
251
motor abnormality detector
motor current abnormality detector
262
detector for detecting abnormality of number of rotations of motor
power amplifier
motor control circuit
252
253
263
261