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Simplification of the Motor Controlling Device

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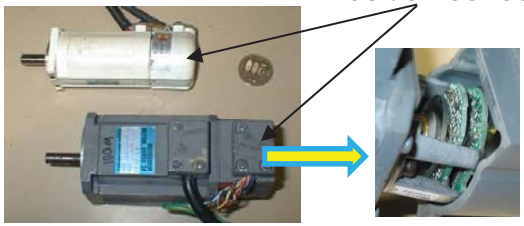

(a) An industrial field AC motor(AC servomotor)

(b) An ordinary homes AC motor(Brushless DC Motor)

Fig1 The example of our laboratory's AC motor

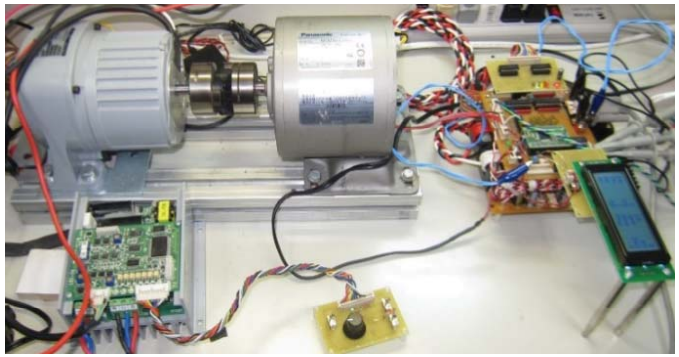

Fig2 The example of our laboratory's developing controlling circuit device

Content:

An electric motor is used in ordinary homes, industrial field, and so on, and an AC motor is especially used from the view of the controllability, efficiency, and miniaturization. However, we need to attach a position sensor to the motor in order to control the motor. This causes the problem which is an increase in costs, increasing in size, and complication of the control device. There is a difference between industrial field motor and ordinary homes motor for method of controlling. Since the industrial field motor requires to control highly, it makes use of an expensive and high precise position sensor which is shown in Fig 1(a) . The ordinary homes motor is driven by using a cheap position sensor. Nevertheless, it causes a sacrifice of controlling.

Thus, we are trying to develop controlling system which is able to give the motor high performance using the cheap sensor. It is possible to drive the motor if we add logic circuit and controlling program in order to achieve the object. It can be similar to the controlling system using a high precise position sensor. In addition, we are using a brushless DC motor as an AC motor, and we can keep the driving method which suppresses the switching loss. We also expect the improvement of efficiency.

Keywords: Brushless DC motor ,
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